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WASHINGTON, D.C.

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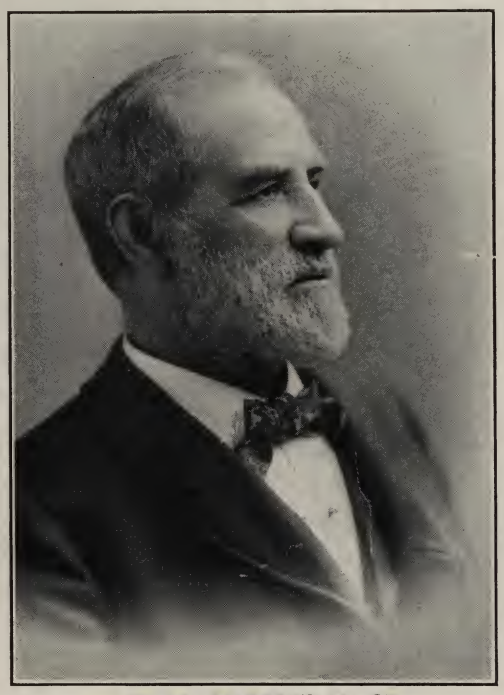

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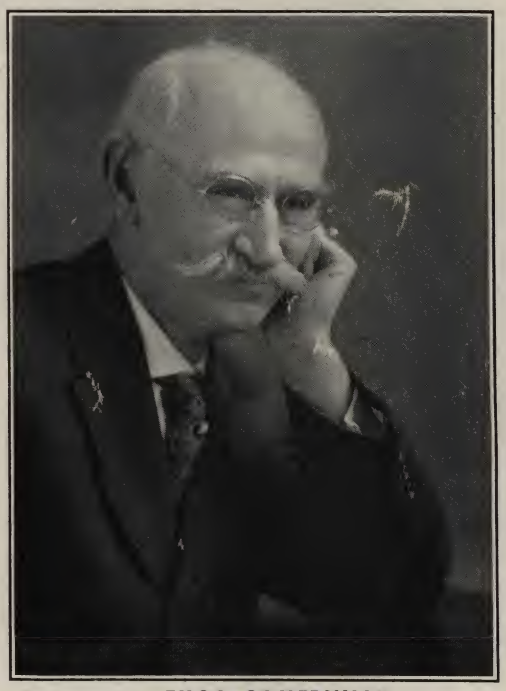

THOS. SOMERVILLE
1858–1933

The Somerville family, who own and operate this Company, respectfully dedicate this catalog to Mr. Thos. Somerville, Sr., the founder of the business, and Mr. Thos. Somerville, who so ably operated it for many years.

Their principles and policies have guided this organization through its 83 years. Their leadership has given us, the third generation, a Company which enjoys an excellent reputation and prestige in the industry.

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In presenting this catalog we do so with the hope that it will prove of real service to you.

We have illustrated thousands of products to care for every need in the plumbing, heating, and industrial field. Those items which we have illustrated are products of experienced and responsible manufacturers and we do not hesitate to recommend them.

There may be times when you will want something that, even though it is not shown here, we will be able to furnish. Let us know all your requirements. We will be pleased to give you any information and will send bulletins covering items not shown in this catalog.

We have an organization that is equipped to render efficient, prompt, and courteous service. We have very large and comprehensive inventories of material, and the complete cooperation of our organization is at your disposal.

It is our hope and desire that we may have the pleasure of serving you.

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Sectional Index

	Starts on Page
Pipe, Pipe Fittings	1
Valves	108
Oil Handling Equipment	146
Steam Specialties	151
Lubricating Devices	183
Pumps, Well Goods, Tanks, Compressors	189
Insulation, Refractories, Vitrified Products	206
Packing, Hose	217
Belting, Sheaves	240
Compounds, Oils	251
Tools	257
Shop Equipment	308
Manila and Wire Rope	310
Hoists, Jacks	313
Air Conditioners, Furnaces, Blowers	316
Heating Boilers, Radiation	323
Heating Specialties	339
Plumbing Fixtures and Fittings, Accessories	366
Water Heaters	499
Metals: Lead, Solder, Babbitt	506
Waterworks Brass Goods	512
Sanitary Specialties, Soil Pipe and Fittings	514
Septic Tanks, Clay Pipe	533
Fire Hydrants, Meters	539
Engineering Data and Useful Information	547

INDEX

A — Page

A.A.R. Fittings, Malleable Iron, Walworth ... 53
AGP Heaters, Water, Storage ... 500
A.P.W. Cabinets, Towel, Paper ... 476
Abrasive Cloth ... 95, 282
Wheels ... 282
Absorbers, Shock, Josam ... 546
Access Panels, Lawco ... 476
Accessories—
Bathroom ... 475–482
Pipe and Bolt Machine ... 267
Ace Spray Heads, Sprinkler System ... 237
Acetylene Hose ... 225
Tanks, Prest-O-Lite ... 288
Acid Hose ... 226
Acid-Core Solder ... 509
Acid-Proof Drain Pipe, Duriron ... 520
Drain Pipe Fittings, Duriron ... 520
Acorns—
Brass, Railing ... 58
Malleable Iron, Railing ... 57
Acratherms, Minneapolis-Honeywell ... 352
Adalox Cloth ... 95
Adamant Babbitt Metal ... 508
Adapters—
Cast Bronze, Underground Service, Chase ... 514
Copper, Flared, Chase ... 90, 91
Faucet, Penberthy ... 494
Malleable Iron, Compression, Dresser ... 14
Underground Service, Chase ... 514
Valve, Radiator, Hoffman ... 362
Wrought Copper, Solder, Chase ... 87
Adhesive Powder, Glossgard ... 256
Adjusters, Pipe Hanger ... 99
Adjusto Heaters and Boosters, Water, Direct ... 347
Adsco Joints, Expansion ... 181
Manifolds, Meter ... 545
Meters, Condensation ... 545
Adsco-Bannon Conduit, Tile ... 207
Aero Belting ... 241
Hose ... 228
Air Cocks ... 166
Cocks, Lunkenheimer ... 124G
Compressors, Worthington ... 205
Conditioner Humidifiers, Sunbeam ... 318
Conditioner Temperature Control Equipment, Sunbeam ... 351
Conditioners, Sunbeam ... 316, 317
Conditioning Registers, T & B ... 321
Eliminators, Sarco ... 361
Filters, Dust-Stop ... 365
Guns, Jenkins ... 124
Guns, Lunkenheimer ... 124G, 125
Hose ... 225, 226
Hose Nipples ... 234
Inlets, Fresh, Cast Iron, Soil Pipe ... 529
Nozzles, Jenkins ... 124
Nozzles, Lunkenheimer ... 124G, 125
Receivers, Arrow ... 204
Required for Ventilation ... 552

A — Page

Air Traps, Armstrong ... 161
Valves, Radiator ... 362–364
Vents ... 147
Vents, Hot Water Heating System, B & G ... 340
Whistles, Lonergan ... 141
Aircell Pipe Covering ... 207
Airigators ... 255
Air-Set Cement ... 209, 212
Airstats, Minneapolis-Honeywell ... 354
Ajax Quick Seal Boiler Repair Compound ... 255
Akron Gaskets, Metal ... 49
Akron Brand—
Scoops, Furnace ... 305
Alarm Columns, Reliance ... 166
Alcatraz Cement, Roof, Plastic ... 254
Alenco Valves, Hose, Fire Line ... 115
Allen Cabinets, Hose, Fire ... 238
Nozzles, Hose ... 236
Spanners, Hose ... 235
Sprinklers ... 237
Valves, Hose, Garden ... 115
Allerton Air Conditioners ... 317
Alligator Lacing, Belt ... 244
Pins, Belt ... 244
Altitude Gauges, Lonergan ... 172
Alvor Constant Level Oil Controls ... 124H, 185
Amco Rope, Manila ... 310
American Boilers, Heating ... 323
Brackets, Radiator ... 338
Chain ... 312
Cradles, Barrel ... 188
Joints, Prepared, Bell-and-Spigot ... 12
Meters, Water ... 544
Radiators ... 335
Rope, Manila ... 310
Thermometers ... 173–175
American-Marsh Pumps, Boiler Feed ... 190
Ammonia Fittings, Vogt ... 63
Flanges, Welding, Vogt ... 63
Gauges, Lonergan ... 172
Thermometers ... 173
Valves Vogt ... 64
Anchors—
Bolt ... 104–106
Hammer-Set ... 105
Screw ... 104, 106, 107
Andree Wrenches, Basin ... 274
Angle Valves, All-Iron, Jenkins ... 117
Valves, All-Iron, Lunkenheimer ... 124F
Valves, Brass, Hose, Jenkins ... 115
Valves, Brass, Jenkins ... 108–110, 114, 115
Valves, Brass, Lunkenheimer ... 124B–124D, 124H, 125–127
Valves, Brass, O-B ... 135
Valves, Brass, Solder, Jenkins ... 114
Valves, Cast Steel, Jenkins ... 122
Valves, Forged Steel, Ammonia, Vogt ... 64
Valves, Forged Steel, Vogt ... 138
Valves, Iron Body, Jenkins ... 116, 117

A — Page

Angle Valves, Iron Body, Lunkenheimer ... 124A–124C, 126, 130
Valves, Semi-Steel, Ammonia, Vogt ... 64
Valves, Stainless Steel, Jenkins ... 122
Valves, Steel, Lunkenheimer ... 124E, 124H, 133
Anti-Friction Metal ... 508
Anti-Syphon Traps ... 497, 498
Valves, DL ... 150
Apexo Roof Flashings ... 532
Aquastats, Minneapolis-Honeywell ... 353, 354
Arc Welding Benches, Lyon ... 308
Arco Boilers ... 329, 331
Compound, Pipe Joint ... 252
Convectors ... 335, 337
Covers, Radiator ... 338
Enclosures, Convector ... 337
Enclosures, Radiator ... 338
Radiator Controls ... 357
Radiators ... 334
Radiotherms ... 357
Regulators ... 357
Valves, Radiator ... 358, 363
Vents ... 363
Arco-Detroit Quick Vents ... 363
Valves, Radiator ... 363
Arcola Boilers ... 327, 331
Heaters, Room ... 327
Heaters, Water ... 331
Tanks, Expansion ... 348
Arcoliner Boilers ... 326
Area Drains ... 516, 518, 519
Areas of Circles ... 552
Areaway Drains ... 516, 518, 519
Arlington County Thimbles ... 530
Armstrong Cork ... 208
Humidifiers, Unit ... 162
Purgers, Refrigerant Gas ... 163
Traps, Air ... 161
Traps, Steam ... 159–162
Arrow Receivers, Air ... 204
Asbestos Braided Packing ... 218, 219
Cement ... 208
Gaskets, Flanged Valves and Fittings ... 49
Gaskets, Manhole and Handhole ... 220
Hot Oil Packing ... 218
Lead Joint Runners ... 290
Millboard ... 206
Paper ... 208
Pipe Covering ... 207
Rope Packing ... 219
Sheet Packing ... 217
Steam Packing ... 218
Tank Jackets ... 504
Valve Stem Packing ... 218
Wick Packing ... 219
Asco Tees, Test ... 531
Ash, Soda ... 255
Ash Cans, Galvanized ... 188
Pit Doors ... 286
Pit Drains, Josam ... 516
Ashcroft Syphons, Steam Gauge ... 169
Testers, Gauge, Pressure ... 170

A

Page

Asphalt Center Strips, Keystone...216
Fibre Expansion Joints.....215, 216
Plastic Compound.....253
Asphaltum Varnish.....254
Assemblies, Flush.....444, 445
Atkins Blades, Saw Compass.....280
Saws, Compass.....280
Auger Bits, Greenlee.....306
Handles, Millers Falls.....306
Augers—
Closet.....294, 295
Drain Pipe.....294
Sewer.....294
Spring, Multicoil.....294
Automatic Valves, Dial Type, Chace.....142
Automobile Pump Oilers..... 187
Radiator Filling Faucets.....145
Autotherm Relief Valves.....345
Auxiliary Water Heaters.....346

B

B & G Boosters.....340
Fittings, Monoflo, Cast Iron.....339
Heaters, Water, Indirect.....347
Heating Systems, Hot Water.....339
Tanks, Compression.....340
Thermo-Cheks.....339
Valves.....339, 340
Vents, Air, Hot Water Heating System.....340
B & W Fire Brick.....211
Babbitt Metal.....508
Rims, Sprocket.....142
Back Pressure Valves, Iron Body...141
Syphon Preventers, Si-Flo.....486
Water Traps, Josam.....517, 532
Water Traps, Palmer.....532
Water Traps and Drains, Combined, Josam.....517
Water Valves, Duriron.....522
Water Valves, Josam.....532
Water Valves, Palmer.....532
Bag Traps, Brass.....498
Balanced Lever Float Valves.....151
Balancers, Vent-Rite.....364
Balancing Fittings, Radiator, DL..359
Union Elbows, DL.....359
Balcony Drains, Josam.....515
Ball Bearing Hose.....230
Check Valves, Brass.....127
Cock Washers.....495
Cocks.....489, 490
Floats, Seamless.....151
Gauge Cocks, Register.....167
Joints, Barco.....182
Joints, Shower.....457
Offset Couplings.....462
Ornaments, Brass, Railing..... 58
Ornaments, Malleable Iron, Railing..... 57
Balls—
Closet Tank.....492
Flush.....492
Fuller.....495
Baltimore Bars, Wrecking.....299
Caulking Tools.....298, 299
Chisels.....298–301
Drills, Star.....301
Gasket Tools.....299
Gouges.....299, 301
Packing Tools.....299
Pins, Bending.....299
Punches, Bull Point.....301
Wrenches.....299

B

Page

Bands—
Pipe Covering.....207
Soil Pipe.....528
Bar Bumpers.....495
Plugs, Cast Iron..... 21
Racks, Lyon.....309
Solder.....508, 509
Solder Moulds.....509
Tin.....508
Barco Joints.....182
Barnes Blades, Saw, Hack.....281
Cutters, Pipe.....268
Barrel Cradles.....188
Faucets.....146
Gaskets.....221
Barrett Jacks.....314
Bars—
Extension, Pipe Hanger.....100
Grab.....479
Slice, Engineers'.....286
Swing.....479
Towel.....477–480
Wrecking, Baltimore.....299
Bars and Soap Holders, Grab, Combined.....478, 479
Base Cabinets, Kitchen, Berger....402
Baseboard Intakes, Return Air....321
Basement Drainers, Penberthy....190
Storage Tanks, Oil.....150
Bases, Y, Flanged, Pop Safety Valve, Lonergan.....158
Basin Clamps.....475
Cocks, Compression.....467, 468
Cocks, Self-Closing.....468
Crosses, Cast Iron, Drainage..... 31
Drains.....472
Gaskets.....495
Plugs.....473
Stoppers.....496
Tees, Cast Iron, Drainage..... 31
Traps, Cast Iron, Drainage..... 32
Wrenches.....274
Basins—
Blow-Off, Cast Iron.....155
Catch, Drainage.....155
Catch, Gravel.....155
Gravel.....155
Wash, Earthenware.....423
Bath Drains and Overflows.....462
Enclosures, Fiat.....451
Faucet Couplings.....462
Faucet Hose Connections.....460
Faucets, Compression.....461
Faucets and Showers, Combined.....460, 461
Fillers.....461
Fillers and Shower Transfer Valves, Combined.....461
Fillers and Showers, Combined.....460, 461
Fitting Finishes.....454
Hangers.....371
Stoppers.....496
Supply Pipes.....462
Supply and Drain Fittings.....461
Supports.....382
Traps, Cast Iron, Drainage..... 32
Bath and Shower Fittings, Combination.....460, 461
Bathroom Accessories.....475–482
Cabinets.....476, 480–482
Mirrors, Hall-Mack.....482
Plans.....371
Baths—
Continuous Flow.....367
Enameled.....372–385
Enameled, Hospital.....367

B

Page

Baths—
Shower.....455, 456
Shower, Hydrotherapeutic.....369
Battery of Lavatories, Enameled..401
Vitreous China.....394
Battery of Urinal Stalls.....441, 442
Bead Chain.....473
Chain Couplings.....473
Beading Tools, Hand, Wiedeke....300
Beam Clamps.....100
Bearing Metal.....508
Beaver Cutters, Pipe.....268
Drives, Power.....266
Oil, Threading.....251
Pipe and Bolt Machines.....266, 267
Reamers, Pipe.....270
Stocks and Dies, Bolt.....264
Stocks and Dies, Pipe.....264–266
Stocks and Dies, Tubing.....265
Vises, Sawing.....277
Beaverette Stocks and Dies, Pipe..265
Bedpan Washers.....370
Behr-Manning Cloth..... 95
Bell Joint Clamps..... 95
Trap Cesspools.....516, 518, 519
Bell and Spigot Pipe, Cast Iron... 12
Prepared Joints..... 12
Bells and Flanges, Cast Iron, Water Main..... 13
Belt Cement.....244
Clamps, Iron Screw.....244
Cutters, Clipper.....243
Dressing.....245
Fasteners, Crescent.....243
Hooks, LX.....244
Lacers, Clipper.....242
Lacing, Alligator.....244
Lacing, Bristol.....244
Lacing, Clipper.....243
Pins, Alligator.....244
Pins, Clipper.....243
Plates, Crescent.....243
Preserver.....245
Belting—
Conveyor.....241, 242
Elevator.....242
Leather.....240
Rubber.....240–242
Transmission.....240, 241
V, Gates.....245, 246
Belting Information.....553, 554
Belts—
Endless, Conveyor, Republic.....241
Endless, Cord, Republic.....241
Endless, Transmission, Republic..241
Measuring, Rules for.....554
V, Gates.....245, 246
Belts and Sheaves, V, Gates.....246
Bench Legs, Steel, Lyon.....309
Vises.....276, 277
Benches—
Welding, Arc, Lyon.....308
Work, Pipe Vise.....279
Bender and Vise Posts, Pipe.....279
Benders—
Pipe, Skinner.....279, 280
Pipe, Tal's.....279
Tube..... 94
Benders and Vise Stands, Pipe, Martin.....278
Bending Pins.....297, 299
Springs, Pipe.....297
Tools, Tube..... 94
Bends—
Acid-Proof, Drain Pipe, Duriron..520

B

Page

Bends—
Cast Iron, Soil Pipe.....523, 524, 527, 531
Cast Iron, Water Main..... 13
Closet.....532
Lead.....507
Pipe..... 7
Return, Brass, Screwed, Extra Heavy..... 85
Return, Brass, Screwed, Standard.....83, 84
Return, Cast Iron, Screwed, Standard.....20, 24
Return, Cast Iron, Screwed, Weights of.....547
Return, Cast Iron, Soil Pipe.....524
Return, Cast Steel, Flanged..... 65
Return, Copper, Flared, Chase... 91
Return, Malleable Iron, Ammonia, Vogt..... 63
Return, Malleable Iron, Screwed, Standard.....50–52
Return, Malleable Iron, Screwed, 300-Pound..... 54
Return, Stainless Steel, Screwed.. 68
Return, Welding, Tube-Turn..... 71
Return, Wrought Copper, Solder, Chase..... 90
Y, Brass, Screwed, Standard...83, 84
Y, Cast Iron, Screwed, Weights of. 547
Y, Malleable Iron, Screwed, Standard.....50–52

Berger Bins and Sifters, Flour.....402
Boxes, Bread and Cake.....402
Cabinets, Kitchen.....402
Pumps, Boat.....203

Bibbs, see Faucets.

Bilge Pumps.....203

Billings Wrenches, Monkey.....274

Bins, Parts and Supplies, Lyon....308

Bins and Sifters, Flour, Berger.....402

Bit Braces, Millers Falls.....306

Bits—
Auger, Greenlee.....306
Expansive, Irwin.....306

Blacksmiths' Hammers.....304
Sledges.....284

Blades—
Saw, Compass, Atkins.....280
Saw, Hack, Barnes.....281

Blake Fittings, Closet.....531
Hangers, Pipe..... 98

Blakeslee Pumps, Jet.....179

Blast Heaters, Modine.....322

Blenders, Water.....456–459

Blind Caps, Cast Brass, Casing....497
Flanges, Cast Iron, Extra Heavy . 47
Flanges, Cast Iron, Standard..... 39
Flanges, Forged Steel, Tube-Turn. 78
Flanges, Stainless Steel..... 68

Block Insulation.....207
Tin Pipe.....506

Blocks—
Cinder, Wabrico.....212
Hoisting, Chain, Yale.....313

Blow Guns, Jenkins.....124
Guns, Lunkenheimer.....124G, 125
Torches, C & L.....291

Blower, Limit and Cut-In Switches, Sunbeam.....351

Blower Switches, Sunbeam.....351

Blower and Limit Switches, Sunbeam.....351

Blower-Filter Units, Furnace, Sunbeam.....319

Blowers, Fire-Tender.....320

B

Page

Blow-Off Basins, Cast Iron.....155
Receivers.....155
Units, Everlasting.....141
Valves, Everlasting.....140, 141
Valves, Jenkins.....124
Valves, Lunkenheimer.....124E, 134

Blowpipe Lighters.....287

Blowpipes, Insto-Gas.....289

Blue Seal Solvent, Drain Pipe.....256

Board, Mill, Asbestos.....206

Boards—
Drain, Sink, Enameled.....415
Drain, Sink, Hardwood.....416
Drain, Sink, Scullery.....414, 415

Boat Pump Plungers.....203
Pump Valves.....203
Pumps.....203

Boekel Heads, Shower.....456

Boiler Cleaner.....255
Cut-Offs, Low-Water.....356
Drain Cocks.....470
Drain and Pressure Relief Valves, Combined, Kitco.....346
Feed Information.....551
Feed Pumps, American-Marsh....190
Feeders, McDonnell.....356
Fittings, Brass..... 81
Fittings, Cast Bronze, Chase..... 90
Fittings, Copper, Flared, Chase... 91
Fittings, Malleable Iron, Union... 81
Information.....551
Level Switch Controls, Kisco.....349
Liquid.....255
Liquid, X.....255
Repair Compound.....255
Repair Plugs.....292
Repairs.....331
Return Systems, Kisco-Bilt.....349
Seal, Liquid.....255
Solder Seal.....255
Spuds, Brass..... 81
Stands, Range.....502
Tube Brushes.....285, 286
Tube Cleaners.....285, 286
Tube Expanders.....284
Tube Ferrules..... 10
Tube Gaskets.....221
Tube Scrapers and Brushes, Combined.....285
Tubes..... 11
Water Feeders and Cut-Offs, Combined, McDonnell.....356
Water Flow Controls, B & G.339, 340

Boilers—
Heating, American.....323
Heating, Arco.....329
Heating, Arcola.....327
Heating, Arcoliner.....326
Heating, Ideal.....324, 325, 327–329
Heating, Kewanee.....329, 330
Heating, Oakmont.....325
Heating, Severn.....324
Power, Lookout.....330
Range.....501, 502
Supply, Hot Water.....331, 332

Boiling Points of Fluids.....552

Bolt Anchors.....104–106
Caps, Vitreous China.....493
Combinations, Closet, Brass.....493
Covers, Closet.....493
Die Heads, Reed.....257
Die Heads, Toledo.....260
Dies, Reed.....257
Stocks and Dies, Beaver.....264
Stocks and Dies, Reed.....258
Stocks and Dies, Toledo.....260

Bolt and Pipe Machines, Beaver 266, 267

B

Page

Bolts—
Coupling, Dresser..... 17
Door, Closet Stall.....475
Door, Urinal Stall.....475
Expansion, Rawl-Drive.....105
Lag, F & M..... 99
Machine.....102, 103
Marble.....475
Sink.....466
Slate.....475
Stove.....103
Toggle, Star.....104

Bonding Mortar.....212

Bondlite Paint.....254

Bonney ThredOlets..... 70
WeldOlets..... 70

Boosters, B & G.....340

Boosters and Heaters, Water, Direct, Adjusto.....347

Borers, Tap.....297

Boring Tools, Ratchet, Toledo.....307

Boss Clamps, Hose.....232
Couplings, Hose.....232
Hickeys, Adjustable.....280

Bottle Oilers, Lunkenheimer..124H, 185

Bowes Racks, Hose.....239

Bowl Cleaner, Closet.....256

Bowls, Closet.....432–434

Box Wrenches, Williams.....275

Boxes—
Bread and Cake, Berger.....402
Control, Sunbeam.....351
Fill, Tank.....148
Power, Zone Control, Sunbeam...351
Roadway.....542
Service, New Pattern.....542
Steel, Lyon.....309
Tool.....307, 308
Tote, Lyon.....309
Utility.....189
Valve, Extension.....542

Boyer Closet Chemicals.....256
Soot Destroyer.....256

Brace Fittings, Trench, Duff-Norton 315

Braces—
Bit, Millers Falls.....306
Trench, Duff-Norton.....315

Brackets—
Faucet, Tray.....464
Radiator.....338, 339
Sink.....416
Wall, Mixing Valve.....458

Bradley Wash Fountains.....423

Braided Packing.....218, 219

Branch Tees, Cast Iron..... 21

Branches—
H, Cast Iron, Soil Pipe.....527
T, Acid-Proof, Drain Pipe, Duriron.....520
T, Cast Iron, Soil Pipe, Insertable, Kafer.....531
T, Cast Iron, Soil Pipe.....524, 525
T, Drain Tile, Unglazed.....539
T, Vitrified, Sewer Pipe.....536
TY, Acid-Proof, Drain Pipe, Duriron.....520
TY, Cast Iron, Drainage..... 28
TY, Hub, Drainage, Richmond... 32
TY, Special Tapped, Drainage, Richmond..... 32
V, Vitrified, Sewer Pipe.....536
Ventilating, Cast Iron, Soil Pipe..525
Y, Acid-Proof, Drain Pipe, Duriron.....520
Y, Brass, Screwed, Extra Heavy.. 85
Y, Cast Iron, Drainage.....28, 29

B

Page

Branches—
Y, Cast Iron, Flanged, Extra Heavy....46, 48
Y, Cast Iron, Flanged, Standard.38, 40
Y, Cast Iron, Screwed, Extra Heavy.... 26
Y, Cast Iron, Screwed, Standard 19, 24, 26
Y, Cast Iron, Soil Pipe..525, 526, 531
Y, Cast Iron, Soil Pipe, Insertable, Kafer....531
Y, Cast Iron, Water Main.... 13
Y, Cast Steel, Flanged....66, 67
Y, Cleanout, Cast Iron, Soil Pipe.531
Y, Drain Tile, Unglazed....539
Y, Forged Steel, Screwed, Vogt... 59
Y, Special Tapped, Drainage, Richmond.... 32
Y, Stainless Steel, Flanged.... 68
Y, Steel, Flanged, Lightweight Pipe.... 9
Y, Vitrified, Sewer Pipe....536

Branches and Mains, Table of....552

Brass, Sheet....506

Brass Ferrules....510
Fittings, Boiler.... 81
Fittings, Closet Tank....491
Fittings, Compression, Imperial. . 92
Fittings, Flanged, Extra Heavy... 85
Fittings, Flanged, Standard.... 85
Fittings, Railing.... 58
Fittings, S.A.E., Imperial.... 93
Fittings, Screwed, Extra Heavy. . 85
Fittings, Screwed, Standard ...83, 84
Fittings, Threadless, Flagg-Seal... 86
Fittings, Vent....509
Pipe, Seamless.... 82
Sheets....506
Tubing.... 83

Brazing Outfits, Prest-O-Lite..287, 288

Bread and Cake Boxes, Berger....402

Breakers, Vacuum, Flush Valve, Sloan....483

Brewers' Hose....225

Brick, Fire....209–211

Brick Chisels, Baltimore....298
Clamps....283
Drills, Baltimore....301

Bricks—
Building....212
Common....212
Face....212
Muirkirk....212
Paving....212

Briggs Clarifiers, Oil....183

Brine Thermometers....173

Bristol Lacing, Belt....244

Bronze Powder, Radiator....254

Bronzing Brushes, Radiator....254
Liquid....254

Brushes—
Bronzing, Radiator....254
Condenser Tube....285
Fittings, Copper.... 95
Furnace....286
Heater....286
Pipe Dope....254
Plumbers'....286
Sewer Cleaning....293, 296
Tube, Boiler....285, 286
Tubing, Copper.... 95

Brushes and Scrapers, Tube, Combined....285

Bubblers, Drinking Fountain..450, 451

Buckets—
Cement, Galvanized....188
Contractors', Galvanized....188

B

Page

Buckets—
Fire, Galvanized....188
Water, Galvanized....189

Budget Heaters, Water, Storage....500

Buffalo Exhausters....321
Fans....321

Building Bricks....212

Bulbs—
Furnace, Rubber....492
Temperature, Hoffman....343

Bulkhead Fittings, Copper, Flared, Chase.... 91

Bull Plugs.... 74
Point Punches, Baltimore....301

Bull Dog Clips, Wire Rope....312

Bumpers—
Bar....495
Screw....495
Seat, Closet....495
Tack....495

Bundling Table, Pipe.... 1

Bundy Steel Tubing.... 11

Burners—
Coal, Automatic....320
Garbage, Water Heating, Kewanee....330

Burner-Set Refractory Concrete...209

Burnishing and Flaring Tools, Imperial.... 94

Burnley Soldering Paste....509

Burring Reamers....269, 270

Bursting Pressures of Pipes.... 8

Bushings—
Brass, Screwed, Standard....83, 84
Cast Iron, Screwed, Standard....20, 21, 25
Cast Iron, Screwed, Weights of...547
Copper, Flared, Chase.... 90
Double Tapped, McDonald....148
Eccentric, Cast Iron....20, 21, 25
Eccentric, Radiator.... 21
Forged Steel, Screwed, Vogt.... 60
Hose....232
Malleable Iron, Standard...25, 50, 51
Radiator, Cast Iron, Standard.... 21
Solder....510
Stainless Steel, Screwed.... 68
Steel, Standard....25, 50, 51
Storage Tank, Underground....148

Butt Nipples.... 97

Butterfly Valves....154

Buzzell Wrenches, Basin....274

Byers Pipe, Genuine Wrought Iron.4, 5

By-Pass Valves, Schaefer....154

C

C & L Blow Torches....291
Fire Pots....290, 291

Cabinet Lavatories....396–398
Sinks....403–409, 413

Cabinets—
Bathroom....476, 480–482
Fire Extinguisher....238, 239
Hose, Fire....238
Kitchen, Steel, Berger....402
Shower....451, 452
Storage, Lyon....309
Towel, Paper....476
Towel Supply and Utility....476
Wardrobe and Storage, Combined....308

Cake and Bread Boxes, Berger....402

Calibrated Relief Valves, Watts...344

Calking, see Caulking

C

Page

Candle Wick Packing....219

Candles, Plumbers'....256

Canopy Flanges, Brass....496

Cans—
Ash, Galvanized....188
Gasoline....188
Waste, Oily....188

Cape Chisels, Baltimore....298, 301

Caps—
Blind, Cast Brass, Casing....497
Bolt, Vitreous China....493
Brass, Screwed, Extra Heavy.... 85
Brass, Screwed, Standard....83, 84
Cast Iron, Screwed, Standard....21, 25, 26
Cast Iron, Screwed, Weights of...547
Cast Iron, Water Main.... 13
Copper, Flared, Chase.... 91
Drive, Clayton Mark....200
Fill, Tank....148
Forged Steel, Screwed, Vogt.... 60
Jaw, Vise, Reed....276
Malleable Iron, A.A.R., Walworth 53
Malleable Iron, Compression, Dresser.... 14
Malleable Iron, Screwed, Standard....50–52
Malleable Iron, Screwed, 300-Pound....54, 55
Quaturn....493
Stainless Steel, Screwed.... 68
Tank, Truck, McDonald....147
Vent, Cast Iron, Soil Pipe....529
Welding, Watson-Stillman.... 69
Wrought Copper, Solder, Chase... 89

Carboloy Points, Drill, Masonry...302

Carey Covering, Pipe, Sectional....207

Careycel Jackets, Tank, Asbestos...504

Carlan Refacers, Valve....302

Carpenters' Hammers, Pexto....304
Levels, Millers Falls....305

Cases, Tool....307, 308

Casing Couplings.... 18
Fittings, Cast Brass....496, 497

Cast Brass Fittings, Casing...496, 497

Cast Bronze Fittings, Boiler, Chase.... 90
Fittings, Solder, Chase....86–90
Fittings, Underground Service, Chase....513, 514

Cast Iron Fittings, Drainage....27–32
Fittings, Flanged, Extra Heavy.41–48
Fittings, Flanged, Standard....33–40
Fittings, Long Sweep.... 22
Fittings, Screwed, Extra Heavy....25, 26
Fittings, Screwed, Standard....19–21, 23–26
Fittings, Screwed, Weights of....547
Fittings, Soil Pipe....522–531
Fittings, Sprinkler.... 22
Fittings, Water Main.... 13
Pipe, Bell and Spigot.... 12
Pipe, Flanged.... 12
Pipe, Threaded.... 10
Pipe, Water.... 12
Soil Pipe....522

Cast Steel Fittings, Flanged....65–67

Castable Material, Plicast....209
Refractory, Cas-To-Fit, Robinson.212

Cas-To-Fit Castable Refractory, Robinson....212

Catch Basins, Drainage....155
Basins, Gravel....155

Caulking Hammers, Mueller....300
Irons....298–300
Lead....508

C

Page

Caulking Tools....298–300
Tools, Rawl-Anchor....105
Tools, Rawls....107
Ceiling Caulking Irons....298
Ceiling and Floor Plates, Combination....364
Cellar Drainer Covers....190
Drainers, Penberthy....190
Traps, Vitrified, Sewer Pipe....537
Cement—
Air-Set....209, 212
Asbestos....208
Belt....244
Insulating....208
Iron, Smooth-On....253
Joint, Pipe....252
Magnesia....208
Plastic, Stove and Furnace....253
Refractory....209, 212
Repair, X-Pandotite....253
Roof....254
Spud....253
Stove and Furnace....253
Waterproof....244
X-Pandotite....253
Cement Pails, Galvanized....188
Center Strips, Asphalt, Keystone....216
Centers, Urinal and Closet Stall....474
Centrifugal Jet Pumps, Deming....193
Pump Packing....219
Pumps, Deming....191, 193
Pumps, Worthington....192
Cesspool Cleaner....256
Cesspools—
Bell Trap....516, 518, 519
Brass....518
Cast Iron....515–519
Josam....515
Stable....519
Stable Vault, Saaco....519
Chace Valves, Automatic, Dial Type....142
Chain—
Bead....473
Brass Link, Plumbers'....474
Jack....312
Plumbers'....473, 474
Chain Bench Vises....277
Couplings, Bead....473
Fittings Tongs, Williams....272
Hoists, Yale....313
Pipe Tongs, Williams....271, 272
Pipe Vises, Williams....277
Post Vises....277
Stays....473
Vise Stands, Ridgid....278
Chains and Hooks, Holdback, Curtain....459
Challenge Belting....242
Challenger Belting....240
Champion Hose....224, 225
Chandelier Hooks, Malleable Iron, Standard....50, 51
Loops, Malleable Iron, Standard....50, 51
Channel Pipe, Vitrified Clay....538
Channels, Sewage Filter, Vitrified Clay....538
Chariot Belting....241
Chase Fittings, Cast Bronze, Boiler. 90
Fittings, Cast Bronze, Solder....86–90
Fittings, Cast Bronze, Underground Service....513, 514
Fittings, Flared, Copper....90, 91
Fittings, Flared, Copper, Underground Service....514

C

Page

Chase Fittings, Solder, Wrought Copper....86–90
Flanging Tools....94
Sizing Tools....94
Solder....509
Solder Fittings....86–90
Stops....511–513
Stops and Drains....511, 512
Straps, Tube, Copper....88
Unions, Underground Service....513
Valves, Brass, Solder....134
Valves, Check, Brass, Solder....134
Valves, Gate, Brass, Solder....134
Valves, Globe, Brass, Solder....134
Valves, Tank, Oil....147
Check Hinges, Closet Seat....493
Valves, All-Iron, Horizontal, Clayton Mark....200
Valves, All-Iron, Horizontal, Lunkenheimer....124F
Valves, All-Iron, Swing, Lunkenheimer....124F, 130
Valves, Brass, Angle, Jenkins....110, 111
Valves, Brass, Angle, Lunkenheimer.124B–124D, 127, 128
Valves, Brass, Ball, Lunkenheimer127
Valves, Brass, Compression, Imperial....92
Valves, Brass, Horizontal, Jenkins....110, 111, 114
Valves, Brass, Horizontal, Lunkenheimer.124B-124D, 127, 128
Valves, Brass, Horizontal, O-B....135, 136
Valves, Brass, Horizontal, Solder, Chase....134
Valves, Brass, Horizontal, Solder, Jenkins....114
Valves, Brass, Lift, Lunkenheimer....124B, 124C, 128
Valves, Brass, S.A.E., Imperial....93
Valves, Brass, Swing, Jenkins111, 114
Valves, Brass, Swing, Lunkenheimer....124B, 124C, 128
Valves, Brass, Swing, O-B....135
Valves, Brass, Swing, Solder, Chase....134
Valves, Brass, Swing, Solder, Jenkins....114
Valves, Brass, Vertical, Jenkins....110
Valves, Brass, Vertical, Lunkenheimer....127, 128
Valves, Brass, Vertical, O-B....135
Valves, Brass, Vertical, Solder, Chase....134
Valves, Forged Steel, Angle, Vogt.138
Valves, Forged Steel, Horizontal, Vogt....138
Valves, Forged Steel, Horizontal and Vertical Combined, Vogt....139
Valves, Iron Body, Angle, Jenkins....117, 118
Valves, Iron Body, Horizontal, Jenkins....117–119
Valves, Iron Body, Horizontal, Lunkenheimer....124A, 124C
Valves, Iron Body, Lift, Jenkins....117, 118
Valves, Iron Body, Swing, Jenkins....118, 119
Valves, Iron Body, Swing, Lunkenheimer 124A, 124C, 130, 131
Valves, Iron Body, Vertical, Jenkins....118
Valves, Monel, Swing, Lunkenheimer....124E
Valves, Semi-Steel, Ammonia, Vogt....64
Valves, Steam Trap, Armstrong....160
Valves, Steel, Angle, Lunkenheimer....124E, 134

C

Page

Check Valves, Steel, Horizontal, Lunkenheimer....124E, 134
Valves, Steel, Swing, Lunkenheimer....124E, 134
Check and Stop Valves, Iron Body Jenkins....117
Chemicals, Closet, Water....256
Chesterton Brushes, Furnace....286
Brushes, Tube....285, 286
Cleaners, Flue....285
Cleaners, Tube....285, 286
Cutters, Gauge Glass....167
Scrapers and Brushes, Tube, Combined....285
Washers and Preservers, Gauge Glass....169
Wick, Asbestos....219
Chests, Tool....307, 308
Chicago Pattern Valves, Hose, Brass....115
Chimney Cleaner, Boyer....256
Flue Information....550
Pots....214
Tops....214
Chisels—
Brick, Baltimore....298
Cape, Baltimore....298, 301
Cold, Baltimore....298, 301
Diamond Point, Baltimore....298, 301
Diamond Point, Mueller....300
Dog Diamond, Mueller....300
Floor, Baltimore....298
Half Round Nose, Baltimore....301
Joint, Baltimore....300
Picking, Baltimore....298
Pipe Cutting, Mueller....300
Pneumatic, Baltimore....300
Round Nose, Baltimore....299, 301
Straight Joint, Baltimore....299
Wood, Baltimore....299
Chronotherms, Minneapolis-Honeywell....351, 352
Chucks—
Hand, Phillips....105
Shell, Expansion, Rod Hanger, Phillips....105
Church Hinges, Check, Closet Seat 493
Hinges, Closet Seat....493
Seats, Closet....435–440
Cinder Blocks, Wabrico....212
Circle Information....552, 555
Circles, Circumferences and Areas of....552
Circuit Information, Control....351
Circulators—
Water, Hoffman....343
Water, Thrush....341
Circumferences of Circles....552
Cistern Rings and Covers....546
Clamp Gaskets, Collar, Dresser....17
Clamps—
Basin....475
Beam....100
Belt, Iron Screw....244
Brick....283
Collar....95
Fittings, Jewel....79
Flange, Jewel....79
Hose....232, 234, 235, 239
I-Beam....100
Joint, Bell....95
Joint, Pipe....95
Pipe....542
Pipe, Dresser....95
Pipe, Grinnell....100
Pipe, Jewel....79
Pipe, Riser....101

C Page

Clamps—
Pipe, Skinner-Seal....95, 96
Pipe Hanger....100, 101
Pipe Line....95, 96
Riser....101
Strap....542
Wire Rope....312
Clancy Lifters, Eveready....307
Clarifiers, Oil, Briggs....183
Claw Hammers, Pexto....304
Claws, Sewer Cleaning....296
Clay, Fire....208
Clay Bricks....212
Picks....284
Clayton Mark Caps, Drive....200
Couplings, Rod, Pump....198, 200
Cylinders, Pump....197, 198
Leathers....222
Points, Well....198
Pumps, Sand....200
Pumps and Drills, Sand....200
Rings, Packing....222
Rods, Pump, Wood....198
Valves, Check....200
Valves, Foot....201
Cleaner—
Boiler....255
Cesspool....256
Chimney, Boyer....256
Closet Bowl....256
Drain Pipe....256
Drainage Line....256
Flue, Boyer....256
Heating System....255
Hot Water Supply System....255
Septic Tank....256
Sewer Pipe....256
Toilet Bowl....256
Valve, Radiator....255
Vitreous Ware....256
Cleaners—
Flue....285
Pipe, Top-Snake, Marco....295
Sewer....292–296
Sidewalk....305
Tube....285, 286
Waste Pipe....293–295
Cleaning Compound, Desolvo....256
Tools, Sewer....292–296
Tools, Waste....293–295
Cleanout Doors, Flue....286
Ferrules....510
Spoons and Cock Wrenches, Hydrant, Combined....235
Tees, Cast Iron, Soil Pipe....531
T Branches, Cast Iron, Soil Pipe..531
Cleanouts, Traps and Drains, Combined....517
Cleanser, Skin, Pax....475
Cleveland Extractors, Screw....270
Climax Plugs, Test....296
Clinker Hooks, Engineers'....286
Clipper Cutters, Belt....243
Heaters, Water, Storage....500
Lacers, Belt....242
Lacing, Belt....243
Pins, Belt....243
Clips, Wire Rope....312
Closet Augers....294, 295
Bends....532
Bolt Combinations, Brass....493
Bolt Covers....493
Bolt Nuts....493
Bowl Cleaner....256
Bowl Cushion Rings....492
Bowls....432–434
Chemicals, Water....256

C Page

Closet Combinations....424–432
Combinations, Hospital....368
Combinations, Marine....432
Elbows....491, 492
Fittings....531, 532
Floor Flange Gaskets....492
Floor Flange Rings....492
Floor Flanges....492, 532
Flush Connections....491
Flush Pipe Holders....490
Flush Pipes....491
Flush Valves, Nibco....489
Flush Valves, Sloan....482–485
Flush Valves, Speakman....486–488
Flush Valves, Watrous....485, 486
Pulls....490
Screw Combinations, Brass....493
Screw Nuts....493
Seat Bumpers....495
Seat Hinges....493
Seat Rubbers....495
Seats....435–440
Slip Collars....532
Spud Flanges....496
Spud Reducers....491
Spud Washers....495
Spud Wrenches....274, 299
Spuds....491
Stall Door Bolts....475
Stall Hinges....475
Stall Throw Latches....475
Stall Trimmings....474
Supplies....491
Supply Pipe Holders....490
Supply Pipes....491
Supports, Wall....429, 430
Tank Balls....492
Tank Fittings....491, 492
Tank Float Valves....489, 490
Tank Floats....490
Tank Levers....490
Tank Lift Wires....490
Tank Refill Tubes....490
Tank Rods....490
Tanks....434
Closets—
Frost-Proof, Vogel....430, 431
Hopper, Vogel....430, 431
Water....424–432
Water, Hospital....368
Water, Marine....432
Cloth—
Abrasive....95, 282
Adalox....95
Crocus....282
Emery....282
Cloths—
Wiping....220
Wiping, Formed, Unique....509
Coal Burners, Automatic....320
Coating, Pipe, Protective....6
Cock Wrenches....144
Wrenches and Cleanout Spoons, Hydrant, Combined....235
Cocks—
Air....166
Air, Lunkenheimer....124G
Ball....489, 490
Basin, Compression....467, 468
Basin, Self-Closing....468
Bath, Compression....461
Corporation....513
Curb, Chase....513
Drain....167
Drain, Boiler....470
Engine, Traction....167
Gas Service....144
Gauge....165, 167
Iron, Standard....143, 144
Laundry Tray, Compression.463, 464

C Page

Cocks—
Pantry, Compression....469, 470
Shampoo, Compression....467
Shut-Off, Imperial....145
Sill, Compression....470
Steam, Brass....143
Steam, Iron....143, 144
Stop, Compression....470, 471
Stop, Compression, Chase....511
Stop, Compression, McDonald....512
Stop, Compression, Scott....511
Stop, Copper Tubing, Chase....512
Stop, Corporation....513
Stop, Ground Key....511, 512
Stop, Hydrant....513
Stop, Inverted Key, Diamond....512
Stop, Laboratory, Mueller....511
Stop, Self-Closing....471
Stop, Underground Service, Chase513
Urinal, Self-Closing....471
Vulcabeston, Iron....143
Coes Wrenches....274
Coil Information, Steam....550
Packing....217–220
Coiled Springs, Flexible, Waste Cleaning....294, 295
Cold Chisels, Baltimore....298, 301
Rolled Copper Sheets....506
Water Paste....206
Coleman Lanterns....292
Collar Clamp Gaskets, Dresser....17
Clamps....95
Collars—
Flue Pipe....505
Sink....466
Flare, Slip, Closet....532
Columns—
Alarm, Reliance....166
Pipe....8
Water, Reliance....166
Columns and Proving Pumps, Mercury, Gas Fitters'....297
Combination Gauges and Hot Water Thermometers....173
Pipe Vises, Reed....276
Combinations—
Closet....424–432
Closet, Hospital....368
Closet, Marine....432
Closet Bolt, Brass....493
Closet Screw, Brass....493
Hopper....430, 431
Common Bricks....212
Companion Flanges, Brass, Extra Heavy....85
Flanges, Brass, Standard....85
Flanges, Cast Iron, Extra Heavy....47, 48
Flanges, Cast Iron, Standard...39, 40
Flanges, Cast Iron, Weights of...547
Flanges, Forged Steel, Tube-Turn....77, 78
Flanges, Forged Steel, Vogt....61
Flanges, Stainless Steel....68
Comparison of Wire Gauges....556
Compass Saw Blades, Atkins....280
Saws, Atkins....280
Compound—
Boiler Repair....255
Cleaning, Desolvo....256
Drain Pipe....256
Gasket....253
Graphite, Pipe Joint....251
Joint, Pipe....251–253
Joint, Sewer....252, 253
Joint, Water Main....508
Leak, Boiler....255
Plastic, Asphalt....253

C — Page

Compound—
Sealing, Joint....253
Smooth-On....253
Compound Gauges, Lonergan....171
Compression Fittings, Brass, Imperial....92
Fittings, Copper, Chase....90, 91
Fittings, Copper, Underground Service, Chase....514
Fittings, Malleable Iron, Dresser..14
Tanks....340
Compressors, Air, Worthington....205
Concrete, Refractory....209
Concrete Drills, Baltimore....301
Inserts, Modern....100
Condensation Meter Manifolds, Adsco....545
Meters, Adsco....545
Pumps, Hoffman-Economy..348, 349
Condenser Tube Brushes....285
Tubes....10
Conditioners, Air, Sunbeam..316, 317
Conductor Pipe, Wheeling....506
Conduit, Tile....207
Conduit Rod Couplings....296
Tools....296
Cone Washers....495
Connections—
Brass, Compression, Imperial....92
Expansion Joint, Drain, Josam....515
Flush, Closet....491
Hose, Bath....460
Hose, Bath Faucet....460
Inlet, Swimming Pool, Josam....518
Lavatory....472
Offset, Formula for....552
Outlet, Swimming Pool, Josam....518
Overflow, Swimming Pool, Josam.518
Roof, Cast Iron, Drainage....31
Siamese, Standpipe....236
Standpipe....236
Tucker, Cast Iron, Drainage....31
Connolly Hubs, Saddle....530
Conoidal Fans, Buffalo....321
Consolidated Gauges, Water....164
Constant Level Oil Controls, Lunkenheimer....124H, 185
Continuous Drains....465
Contractors' Outfits, Rawlplug....106
Pails, Galvanized....188
Control Boxes, Sunbeam....351
Circuit Information....351
Units, Dual, Heating System, B & G....340
Units, Dual, Heating System, Thrush....342
Units, Hydrotherapy Department.368
Units, Standpipe and Hydrant....235
Valves, Flow, B & G....339, 340
Valves, Flow, Thrush....341
Valves, Hoffman....343
Valves, Pressure and Relief, Penberthy....342
Controllers—
Furnace, Combination, Minneapolis-Honeywell....354
Humidity, Minneapolis-Honeywell....352
Humidity, Sunbeam....351
Pressure, Minneapolis-Honeywell....353, 354
Temperature, Hoffman....343
Controls—
Draft....506
Flow, Boiler Water, B & G..339, 340
Minneapolis-Honeywell....351–355

C — Page

Controls—
Oil, Constant Level, Lunkenheimer....124H, 185
Radiator, Arco....357
Stack, Sunbeam....351
Switch, Water Level, Kisco....349
Temperature, Minneapolis-Honeywell....351–355
Temperature, Sunbeam....351
Water, Float Valve....489
Convector Enclosures, Arco....337
Convectors, Arco....335, 337
Conveyor Belting....241, 242
Cook Strainers, Well....199
Coolers, Water, Electric....450
Coolers and Drinking Fountains, Combined....449, 450
Coping, Wall....213
Coping Fittings, Wall....213
Specials, Wall....213
Copper, Sheet....506
Copper Fittings, Brushes....95
Fittings, Flared, Chase....90, 91
Fittings, Flared, Underground Service, Chase....514
Fittings, Solder, Chase....86–90
Floats....490
Pipe, Seamless....82
Refrigerator Tubing, Seamless....83
Sheets....506
Tempers, Sheet, Roofing....506
Tube Straps, Chase....88
Tubing....82, 83
Tubing Brushes....95
Coppers, Soldering....297
Cord Belts, Endless, Republic....241
Cork—
Regranulated....208
Sheet....216
Cork Rubber Expansion Joints....216
Corks, Resin Bound, Expansion Joint....216
Corners, Urinal and Closet Stall...474
Cornice Drains, Josam....515
Corning Gauge Glasses....168
Corporation Stops....513
Corrosion-Resisting Valves, Jenkins....122
Corrugated Culvert Pipe....10
Rubber Matting....216
Corto Brackets, Radiator....337
Radiators....332, 333
Cotton Hose....228
Waste....220
Coupling Bolts, Dresser....17
Expanders, Elkhart....233
Gaskets, Dresser....17
Couplings—
Boiler, Brass....81
Boiler, Cast Bronze, Solder....90
Boiler, Malleable Iron, Union....81
Brass, Boiler....81
Brass, Compression, Imperial....92
Brass, S.A.E., Imperial....93
Brass, Screwed, Extra Heavy....85
Brass, Screwed, Standard....83, 84
Casing....18
Cast Bronze, Boiler, Solder....90
Cast Iron, Drainage....31
Cast Iron, Screwed, Extra Heavy. 26
Cast Iron, Screwed, Standard..20, 25
Chain, Bead....473
Eccentric, Cast Iron, Screwed, Standard....20, 25
Faucet, Bath....462
Forged Steel, Screwed, Vogt....60

C — Page

Couplings—
Hose, Boss....232
Hose, Dix-Lock....233
Hose, Expansion Ring....233
Hose, McDonald....234
Hose, Rex-Tite....228, 230
Hose, Rex-Tube....230, 231
Hose, Sherman....233
Hose, Solder....228
Hose, Steam....233
Hose, Water....233
Hub, Drainage, Richmond....32
Line Pipe....18
Malleable Iron, A.A.R., Walworth 53
Malleable Iron, Boiler, Union....81
Malleable Iron, Compression, Dresser....14
Malleable Iron, Screwed, Heavy..55
Malleable Iron, Screwed, Standard....50–52
Malleable Iron, Screwed, 300-Pound....54, 55
Offset, Ball....462
Pipe, A.P.I....18
Pipe, Dresser....14–16
Pipe, Extra Heavy....18
Pipe, Standard....18
Reducer, Pump Rod....200
Reducer, Swivel, McDonald....146
Reducer, Tank Car, McDonald...146
Rod, Conduit....296
Rod, Pump, Steel....200
Rod, Pump, Wood....198
Rod, Sewer....296
Solder, Hose....227
Stainless Steel, Screwed....68
Union, Brass, S.A.E., Imperial....93
Union, Lead Flange....513
Union, Malleable Iron, Boiler....81
Welding, Watson-Stillman....69
Wrought Copper, Solder, Chase...86
Covering—
Pipe, Magnesia....207
Pipe, Protective....6
Pipe, Sectional....207
Covering Tubes....473
Covers—
Closet Bolt....493
Drainer, Cellar, Penberthy....190
Hole, Faucet....473
Hole, Oil, Gits....186
Radiator, Arco....338
Seam, Vitreous China....443
Sump Pump, Penberthy....190
Vitreous China....493
Covers and Frames, Manhole....546
Covers and Rings, Cistern....546
Cradles, Barrel....188
Creamery Hose....224
Crescent Extractors, Rivet....243
Fasteners, Belt....243
Plates, Belt....243
Crocus Cloth....282
Cross Valves, Iron Body, Lunkenheimer....130
Crosses—
Basin, Cast Iron, Drainage....31
Brass, Flanged, Extra Heavy....85
Brass, Flanged, Standard....85
Brass, Railing....58
Brass, Screwed, Extra Heavy....85
Brass, Screwed, Standard....83, 84
Cast Brass, Casing....497
Cast Iron, Drainage....30, 31
Cast Iron, Flanged, Extra Heavy....45, 48
Cast Iron, Flanged, Standard....38, 40
Cast Iron, Long Sweep....22

C

Page

Crosses—
Cast Iron, Screwed, Extra Heavy. 26
Cast Iron, Screwed, Standard....19, 24, 26
Cast Iron, Screwed, Weights of...547
Cast Iron, Soil Pipe.....526, 527
Cast Iron, Sprinkler..... 22
Cast Iron, Water Main..... 13
Cast Steel, Flanged.....65–67
Copper, Flared, Chase..... 91
Forged Steel, Screwed, Vogt..... 59
Malleable Iron, A.A.R., Walworth..... 53
Malleable Iron, Hydraulic, Walworth..... 53
Malleable Iron, Railing.....56–58
Malleable Iron, Screwed, Heavy.. 55
Malleable Iron, Screwed, Standard.....50–52
Malleable Iron, Screwed, 300-Pound.....54, 55
Stainless Steel, Flanged..... 68
Stainless Steel, Screwed..... 68
Steel, Flanged, Lightweight Pipe.. 9
Welding, Tube-Turn..... 74
Welding, Watson-Stillman..... 69

Crossover Tees, Malleable Iron.... 52

Crossovers—
Brass, Screwed, Standard.....83, 84
Malleable Iron..... 52

Culvert Pipe, Corrugated..... 10

Cup Glasses, Oil, Lunkenheimer....186
Washers, Oil, Lunkenheimer.....186

Cups—
Force.....296
Grease, Hunter.....183
Grease, Lunkenheimer.....124H, 183
Grease, Plain Steel.....183
Leather.....221, 222
Oil, Gits.....186, 187
Oil, Lunkenheimer...124H, 185, 186
Priming.....185

Curb Stops, Chase.....513
Stops, Inverted Key, Patent Cap.512
Stops and Drains, Inverted Key..512

Curtain Holdback Hooks and Chains.....459
Pins, Shower.....459
Rod Flanges, Shower.....459
Rods, Shower.....459

Curtains, Shower.....459, 460

Curves—
Drain Tile, Unglazed.....539
Vitrified, Sewer Pipe.....537

Cushion Rings, Closet Bowl.....492

Cuspidors and Drinking Fountains, Combined.....447

Cut Lacing.....244

Cut-In Blower and Limit Switches, Sunbeam.....351
Relief Switches, Sunbeam.....351

Cut-Off Switches, Low-Water, McDonnell.....356

Cut-Offs, Low-Water.....356

Cut-Offs and Boiler Water Feeders, Combined.....356

Cut-Offs and Safety Feeders, Combined.....356

Cutter Pins, Pipe.....268, 269
Rollers, Pipe.....268, 269
Wheels, Pipe.....268, 269

Cutters—
Belt, Clipper.....243
Gasket.....220
Gauge Glass.....167
Pipe, Beaver.....268
Pipe, J.R.S.....269

C

Page

Cutters—
Pipe, Reed.....268
Pipe, Ridgid.....269
Pipe, Toledo.....267
Pipe, Trimo.....269
Root, Sewer Cleaning.....293, 296
Tube, Wiedeke.....284
Tubing, Imperial..... 93
Tubing, Ridgid..... 94
Tubing, Trimo..... 94
Washer.....220

Cutting, Pipe..... 7

Cutting Hose.....225
Machines, Pipe, Toledo.....261–263
Machines, Pipe, Williams.....266
Machines, Pipe and Bolt, Beaver.....266, 267
Oil.....251

Cutting and Flaring Tools, Tubing. 93

Cylinder Plunger Leathers, Pump..222
Relief Valves, Lonergan.....158
Valve Leathers, Pump.....222

Cylinders—
Insto-Gas.....289
Pump, Clayton Mark.....197, 198
Pump, Deming.....197
Well, Clayton Mark.....197, 198
Well, Deming.....197

Cylindrical Thermometers.....173

D

DL Elbows.....359
Fittings, Balancing, Radiator.....359
Gauges, Oil.....149
Valves, Anti-Syphon.....150
Valves, Radiator.....357–359

Daisy Force Cups.....296

Damper Induction Motors, Minneapolis-Honeywell.....355
Motors, Sunbeam.....351

Dampers—
Flue Pipe.....505
Stove Pipe.....506

Data, Useful.....547–556

Decatur Heaters, Water, Storage...500

Deck Drains, Promenade, Josam...515

Deck Type Sink Faucets, Compression.....462

Decreasers, Drain Tile, Unglazed..539

Deep Well Pumps, McDonald.....194

Deming Cylinders, Pump.....197
Pumping Units.....191
Pumps, Centrifugal.....191, 193
Pumps, Jet.....193
Pumps, Triplex, Plunger.....193

Demon Cement, Air-Set.....209

Dental Fixtures and Lavatories, Combined.....396
Lavatories, Vitreous China.....395
Sink Interceptors, Josam.....417

Desolvo Cleaner.....256

Destroyer, Soot, Boyer.....256

Detroit Lubricators.....184

Dexter Reseaters, Valve.....303
Reseating Outfits.....303

Dial Thermometers.....175

Diamond Flush Valves.....486, 488
Stops.....512
Stops and Drains.....512
Traps.....499

Diaphragm Relief Valves, Watts 344, 345
Sheet Packing.....217
Suction Pumps, Goulds.....191

D

Page

Diaphragms—
Low Pressure.....222
Pump.....222

Die Heads, Bolt, Reed.....257
Heads, Bolt, Toledo.....260
Heads, Rod, Pump, Toledo.....260

Dies, Bolt, Reed.....257

Dies and Stocks—
Bolt, Beaver.....264
Bolt, Reed.....258
Bolt, Toledo.....260
Pipe, Beaver.....264–266
Pipe, Beaverette.....265
Pipe, Reed.....257, 258
Pipe, Ridgid.....259
Pipe, Toledo.....259–262
Tubing, Beaver.....265
Tubing, Toledo.....261

Diesel Exhaust Hose.....232

Dietz Globes, Lantern.....292
Lanterns, Kerosene.....292

Differential Pressure Relief Valves, Thrush.....341

Dimensions—
Cast Iron Fittings, Flanged, Extra Heavy.....41, 48
Cast Iron Fittings, Flanged, Standard.....33, 40
Cast Iron Fittings, Screwed, Extra Heavy..... 26
Cast Iron Fittings, Screwed, Standard.....23–26
Malleable Iron Fittings, Screwed, Standard..... 52
Malleable Iron Fittings, Screwed, 300-Pound..... 55

Direct Water Heaters, Penberthy...180
Water Heaters and Boosters, Adjusto.....347

Discs—
Glass, Lunkenheimer.....186
Hydraulic, Leather.....221
Valve, Jenkins.....123
Valve, Lunkenheimer.....126

Dishes, Soap.....477–480

Dispensers—
Soap, Liquid, Watrous.....476
Soap, Pax.....475

Dispensing Systems, Liquid Soap, Watrous.....476

Distillate Hose.....227

Diverters, Draft, Flue Pipe.....505

Dix-Lock Couplings, Hose.....233

Dixon Compound, Graphite, Pipe Joint..... 251
Dressing, Belt.....245
Graphite, Flake.....251
Guns, Graph-Air.....251

Door Bolts, Closet Stall.....475
Bolts, Urinal Stall.....475
Stops.....479

Doors—
Ash Pit.....286
Cleanout, Flue.....286
Flue.....286
Shower, Fiat.....452, 453

Double Cross Steam Hose.....224

Double-Acting Force Pumps.....195

Draft Controls.....506
Diverters, Flue Pipe.....505
Units, Automatic.....320

Draft-O-Stats.....506

Drain Boards, Sink, Enameled.....415
Boards, Sink, Hardwood.....416
Boards, Sink, Scullery.....414, 415
Cocks.....167

D

Page

Drain Cocks, Boiler....470
Expansion Joint Connections, Josam....515
Pipe, Acid-Proof, Duriron....520
Pipe Augers....294
Pipe Cleaner....256
Pipe Fittings, Acid-Proof, Duriron520
Pipe Solvent....256
Plugs, Laundry Tray....465
Plugs, Lavatory....473
Plugs, Sink....465
Pools, San-Equip....534
Tile, Unglazed....539
Tile Fittings, Unglazed....539
Washers....495

Drain and Pressure Relief Valves, Boiler, Combined, Kitco....346

Drain and Supply Fittings, Bath..461
Fittings, Lavatory....466, 467
Fittings, Lavatory, Wrist Control.369

Drainage Catch Basins....155
Cleaning Tapes....294, 295
Fittings, Cast Iron....27–32
Fittings, Hub, Richmond.... 32
Fittings, Special Tapped, Richmond.... 32
Line Cleaner....256

Drainer Covers, Cellar, Penberthy .190

Drainers, Cellar, Penberthy....190

Drains—
Area....516, 518, 519
Areaway....516, 518, 519
Ash Pit, Josam....516
Balcony, Josam....515
Continuous....465
Deck, Promenade, Josam....515
Elevator, Josam....516
Floor....515–518, 522
Garage, Josam....517
Gutter, Swimming Pool, Josam...518
Industrial....516, 517
Lavatory....472
Lavatory, Pop-Up....467
Lavatory, Pop-Up, Hospital....370
Pop-Up, Foot Control....370
Pop-Up, Knee Control....370
Quick, Waterid....519
Refrigerator, Sani-Teed....519
Roof, Josam....514, 515
Scale, Josam....516
Sediment Bucket, Josam....516, 517
Shower....515, 516
Swimming Pool, Josam....517, 518
Traps and Cleanouts, Combined..517
Urinal, Josam....515

Drains and Overflows—
Bath....462
Sink....465

Drains and Traps, Combined....517

Dredging Sleeves....226

Dresser Bolts, Coupling.... 17
Clamps, Bell Joint.... 95
Clamps, Pipe.... 95
Couplings, Pipe....14–16
Fittings, Compression, Malleable Iron.... 14
Fittings, Steel Pipe....14–17
Gaskets.... 17
Sleeves, Pipe.... 17

Dressers—
Hardwood....297
Seat, Faucet....303
Seat, Valve....302, 303

Dressing, Belt....245

Drift Plugs....297

Drifted and Reamed Pipe, Youngstown.... 2

Drill Holder Grips, Rawl-Grip....107

D

Page

Drill Holders, Rawl....107
Points, Masonry, Carboloy....302

Drilling Templates for Flanged Valves and Fittings, Cast Iron, Extra Heavy.... 47
Templates for Flanged Valves and Fittings, Cast Iron, Standard... 39

Drills—
Brick, Baltimore....301
Concrete, Baltimore....301
Rawl....107
Star, Baltimore....301
Stone, Baltimore....301
Triangle....107

Drills and Pumps, Sand, Clayton Mark....200

Drills and Taps, Pipe, GTD....271

Drinking Fountain Bubblers..450, 451
Fountain Heads....450, 451
Fountains....446–449
Fountains and Cuspidors, Combined....447
Fountains and Water Coolers, Combined....449, 450

Drive Caps, Clayton Mark....200
Shafts, Pipe Machine, Toledo....262
Well Points, Clayton Mark....198

Drivers—
Screw, Millers Falls....306
Screw, Pexto....305
Screw, Supirwin....306

Drives—
Power, Beaver....266
Power, Toledo....263
V-Flat, Vulco Rope, Gates....246

Drop-Forged Steel Fittings, Flanged, Vogt....61–63
Steel Fittings, Screwed, Vogt...59–61

Drum Traps, Cast Iron....499
Traps, Lead....498

Dual Control Units, Heating System, B & G....340
Control Units, Heating System, Thrush....342

Duff-Norton Braces, Trench....315
Fittings, Trench Brace....315
Handles, Jack....315
Jack Screws....315
Jacks....314, 315

Duriron Drains, Floor....522
Fittings, Drain Pipe, Acid-Proof..520
Overflows, Standing....521
Pipe, Acid-Proof....520
Sinks....522
Strainers, Sink....521
Valves, Backwater....522

Dust-Stop Filters, Air....365

Dutch Boy Solder....508

E

Eagle Oil....251

Eastern Pattern Scoops....305

Eccentric Bushings, Cast Iron....20, 21, 25
Bushings, Radiator.... 21
Couplings, Cast Iron, Screwed, Standard....20, 25
Reducers, Cast Iron, Flanged, Extra Heavy....47, 48
Reducers, Cast Iron, Flanged, Standard....39, 40
Reducers, Cast Steel, Flanged....65–67

Eclipse Gaskets, Sectional....220
Hydrants....541
Washers, Street....541

E

Page

Edison Heaters, Water, Storage....501

Ejectors—
Hancock....179
Penberthy....179

Elbows—
Boiler, Cast Bronze, Solder.... 90
Boiler, Malleable Iron, Union.... 81
Brass, Compression, Imperial.... 92
Brass, Flanged, Extra Heavy.... 85
Brass, Flanged, Standard.... 85
Brass, Railing.... 58
Brass, SA.E., Imperial.... 93
Brass, Screwed, Extra Heavy.... 85
Brass, Screwed, Standard....83, 84
Cast Brass, Casing....496, 497
Cast Bronze, Boiler, Solder.... 90
Cast Bronze, Solder, Chase.... 88
Cast Iron, Drainage.... 27
Cast Iron, Flanged, Extra Heavy....41–43, 48
Cast Iron, Flanged, Standard....33–35, 40
Cast Iron, Long Sweep.... 22
Cast Iron, Screwed, Extra Heavy. 26
Cast Iron, Screwed, Standard....19, 23, 26
Cast Iron, Screwed, Weights of...547
Cast Iron, Sprinkler.... 22
Cast Steel, Flanged....65–67
Closet Tank....491, 492
Copper, Flared, Chase....90, 91
Copper, Flared, Underground Service, Chase....514
Flue Pipe....505
Forged Steel, Flanged, Vogt.... 61
Forged Steel, Screwed, Vogt.... 59
Friction of Water in....551
Hub, Drainage, Richmond.... 32
Malleable Iron, A.A.R., Walworth 53
Malleable Iron, Boiler, Union.... 81
Malleable Iron, Compression, Dresser.... 14
Malleable Iron, Hydraulic, Walworth.... 53
Malleable Iron, Railing....56–58
Malleable Iron, Screwed, Heavy.. 55
Malleable Iron, Screwed, Standard....50–52
Malleable Iron, Screwed, 300-Pound....54, 55
Malleable Iron, Union, Railroad.. 81
Radiator, Union, DL....359
Railroad, Malleable Iron, Union.. 81
Rubber, Closet....492
Semi-Steel, Ammonia, Vogt.... 63
Slip-Union, Copper, Flared, Chase.... 91
Stainless Steel, Flanged.... 68
Stainless Steel, Screwed.... 68
Steel, Flanged, Lightweight Pipe.. 9
Union, Balancing, DL....359
Union, Malleable Iron, Boiler.... 81
Union, Radiator, DL....359
Vitrified, Sewer Pipe....537
Welding, Tube-Turn.... 71
Welding, Watson-Stillman.... 69
Wrought Copper, Solder, Chase... 88

Electric Clock Thermostats....351
Drill Hole Saws, Misener....280
Drives, Beaver....266
Drives, Toledo....263
Heaters, Wall, Lawson....338
Pumps, Deep Well, McDonald....194
Sump Pumps, Penberthy....189
Water Coolers....450
Water Heaters....501

Elevator Belting....242
Drains, Josam....516

Eliminators, Air, Sarco....361

Elkay Sinks, Scullery....414, 415

E

Page

Elkhart Expanders, Coupling.....233
Fire Extinguishers.....239
Standpipe and Hydrant Control Units.....235
Elliott-Lagonda Cleaners, Boiler Tube.....285
Emergency Pipe Clamps.....96
Emery Cloth.....282
Wheels.....282
Empire Boilers.....323
Empire Brand Shovels.....304
Enclosures—
Bath, Fiat.....451
Convector, Arco.....337
Radiator, Arco.....338
Endless Belts, Conveyor, Republic.241
Belts, Cord, Republic.....241
Belts, Transmission, Republic....241
Ends, Urinal and Closet Stall.....474
Engine Cocks, Traction.....167
Governors, Gardner-Denver.....155
Information.....553
Lubricators, Detroit.....184
Lubricators, Lunkenheimer..184, 185
Engineering Data.....547–556
Engineers' Favorite Tube Cleaners.285
Firing Tools.....286
Hammers.....284
Wrenches, Williams.....275
Equipment, Shop, Lyon.....308, 309
Equivalents, Metric.....556
Erco Tank Balls.....492
Escutcheons—
Cast Brass.....496
Lock, Mixing Valve.....458
Eveready Lifters, Clancy.....307
Everlasting Blow-Off Units.....141
Blow-Off Valves.....140, 141
Excelo Belting.....242
Excelso Heaters, Water, Auxiliary..346
Heaters, Water, Indirect.....347
Exhaust Fans, Buffalo.....321
Fittings, Interlocked, Rex-Tube...231
Hose.....231, 232
Pipe Heads, Swartwout.....157
Exhausters, Buffalo.....321
Expanded Flanges, Stainless Steel.. 68
Expanders—
Coupling, Elkhart.....233
Tube.....284
Expanding Pliers, Lead Pipe.....297
Expansion Bolts, Rawl-Drive.....105
Joint Connections, Drain, Josam..515
Joints, Adsco.....181
Joints, Asphalt Fibre.....215, 216
Joints, Brass.....180
Joints, Copper.....181
Joints, Iron Body.....180
Joints, Servicised.....216
Ring Hose Couplings.....233
Shells, Rod Hanger, Phillips.....105
Shields.....104–107
Tank Water Gauges.....164
Tanks.....348
Valves, Forged Steel, Ammonia, Vogt..... 64
Valves, Semi-Steel, Ammonia, Vogt..... 64
Expansion of Steam Pipes.....551
Expansive Bits, Irwin.....306
Explanatory Notes on Wire Rope..310
Extension Bars, Pipe Hanger.....100
Pieces, Brass, Screwed, Standard 83, 84

E

Page

Extension Pieces, Cast Iron, Soil Pipe.....528
Pieces, Malleable Iron, Screwed, Standard.....50, 51
Tubes, Brass.....473
Valve Boxes.....542
Extinguisher Cabinets, Fire...238, 239
Extinguishers, Fire, Elkhart.....239
Extractors—
Pipe, Ridgid.....271
Rivet, Crescent.....243
Screw, Ezy-Out.....270
Extras, Tube-Turn..... 74
Ezy-Out Extractors, Screw.....270

F

F & M Bars, Extension.....100
Clamps, Beam.....100
Hangers, Pipe.....98, 99
Lag Screws..... 99
Saddles, Protection, Pipe Covering.102
Face Bricks.....212
Fairbanks Cocks, Steam, Iron.....143
Fairway Hose.....224
Fans—
Conoidal, Buffalo.....321
Exhaust, Buffalo.....321
Fasteners, Belt, Crescent.....243
Faucet Adapters, Penberthy.....494
Brackets, Tray.....464
Couplings, Bath.....462
Flanges, Brass.....496
Hole Covers.....473
Keys, Lawn.....470
Nuts, Brass.....494
Reseaters.....303
Screws, Brass.....494
Seat Dressers.....303
Washers.....494
Wrenches, Baltimore.....299
Faucets—
Barrel.....146
Bath, Compression.....461
Filglas.....470
Filling, Radiator, McDonald.....145
Glass Filling.....470
Hose, Compression.....468, 469
Hose, Ground Key.....469
Ice Water, Self-Closing.....470
Laboratory, Mueller.....511
Laundry Tray, Compression.463, 464
Lavatory, Compression.....467, 468
Lavatory, Self-Closing.....468
Lawn, Compression.....470
Oil.....146
Pantry, Compression.....469, 470
Plain, Compression.....468, 469
Plain, Ground Key.....469
Plain, Self-Closing.....469
Savill.....469
Sediment.....470
Service Sink, Compression.....464
Shampoo, Compression.....467
Sink, Compression.....462–464
Slop Sink, Compression.....464
Swan-Neck.....469
Tank, Truck, McDonald.....147
Wash Sink, Compression.....464
Faucets and Showers, Bath, Combined.....460, 461
Favorite Tube Cleaners.....285
Feeders—
Boiler, McDonnell.....356
Safety, McDonnell.....356
Feeders and Cut-Offs—
Boiler Water, Combined, McDonnell.....356

F

Page

Feeders and Cut-Offs—
Safety, Combined, McDonnell....356
Feet, Radiator.....339
Felt—
Hair.....208
Sheet.....218
Felton's Couplings, Rod.....296
Ferrenewo Valves, Iron Body, Lunkenheimer.....124B, 126
Ferrules—
Boiler Tube..... 10
Brass.....510
Cleanout.....510
Iron Body.....510
Trap Screw.....510
Fiat Cabinets, Shower.....451, 452
Door, Shower.....452, 453
Enclosures, Bath.....451
Receptors, Shower.....453
Fiberglas Filters, Air, Dust-Stop...365
Fibre Rods.....206
Sheets.....206
Tubing.....206
File Handles.....282
Filers' Vises, Reed.....276
Files.....282, 283
Filglas Faucets.....470
Fill Boxes, Tank.....148
Caps, Tank.....148
Fillers, Tub.....461
Fillers and Shower Transfer Valves, Bath, Combined.....461
Fillers and Showers, Bath, Combined.....460, 461
Filling Faucets, Radiator, McDonald.....145
Filters, Air, Dust-Stop.....365
Finishes—
Bath Fitting.....454
Lavatory Fitting.....454
Sink.....403
Fire Brick.....209–211
Clay.....208
Clay Fittings, Stove Pipe.....215
Clay Flue Lining.....215
Clay Stove Pipe.....215
Extinguisher Cabinets.....238, 239
Extinguishers, Elkhart.....239
Hose.....228
Hose Cabinets.....238
Hose Clamps.....239
Hose Nipples.....239
Hose Racks.....237, 239
Hose Reels.....237
Hydrants.....540, 541
Line Hose Valves.....115
Pails, Galvanized.....188
Pot Water Heaters.....346
Pots, C & L.....290, 291
Pots, Insto-Gas.....289
Fire-Tenders, Automatic.....320
Firing Tools, Engineers'.....286
Fisher Floats, Ball, Seamless.....151
Governors, Pump.....155
Fitting, Pipe..... 7
Fitting Finishes, Bath.....454
Finishes, Lavatory.....454
Fittings—
A.A.R. Malleable Iron, Walworth..... 53
Ammonia, Vogt..... 63
Balancing, Radiator, DL.....359
Boiler, Brass..... 81
Boiler, Cast Bronze, Chase..... 90
Boiler, Copper, Flared, Chase.... 91

F Page

Fittings—
Boiler, Malleable Iron, Union.... 81
Brass, Boiler..... 81
Brass, Closet Tank.....491
Brass, Compression, Imperial..... 92
Brass, Flanged, Extra Heavy..... 85
Brass, Flanged, Standard..... 85
Brass, Railing..... 58
Brass, S.A.E., Imperial..... 93
Brass, Screwed, Extra Heavy..... 85
Brass, Screwed, Standard.....83, 84
Brass, Threadless, Flagg-Seal..... 86
Brass, Vent.....509
Bulkhead, Copper, Flared, Chase. 91
Casing, Cast Brass.....496, 497
Cast Brass, Casing.....496, 497
Cast Bronze, Boiler, Chase..... 90
Cast Bronze, Solder, Chase....86–90
Cast Bronze, Underground Service, Chase.....513, 514
Cast Iron, Drainage.....27–32
Cast Iron, Flanged, Extra Heavy.....41–48
Cast Iron, Flanged, Standard...33–40
Cast Iron, Long Sweep..... 22
Cast Iron, Screwed, Extra Heavy.....25, 26
Cast Iron, Screwed, Standard.....19–21, 23–26
Cast Iron, Screwed, Weights of ..547
Cast Iron, Soil Pipe.....522–531
Cast Iron, Sprinkler..... 22
Cast Iron, Water Main..... 13
Cast Steel, Flanged.....65–67
Closet.....531, 532
Closet Stall.....474
Closet Tank.....491, 492
Compression, Brass, Imperial..... 92
Compression, Copper, Chase...90, 91
Compression, Copper, Underground Service, Chase.....514
Compression, Malleable Iron, Dresser..... 14
Copper, Flared, Chase.....90, 91
Copper, Flared, Underground Service, Chase.....514
Copper, Solder, Chase.....86–90
Drain Pipe, Acid-Proof, Duriron..520
Drain Tile, Unglazed.....539
Drainage, Cast Iron.....27–32
Drainage, Hub, Richmond..... 32
Drainage Special Tapped, Richmond..... 32
Exhaust, Interlocked, Rex-Tube..231
Flared, Copper, Chase.....90, 91
Flared, Copper, Underground Service, Chase.....514
Flue Pipe.....505
Forged Steel, Flanged, Vogt....61–63
Forged Steel, Screwed, Vogt....59–61
Furnace Pipe.....321
Hydraulic, Malleable Iron, Walworth..... 53
Long Sweep, Cast Iron..... 22
Malleable Iron, A.A.R., Walworth 53
Malleable Iron, Ammonia, Vogt.. 63
Malleable Iron, Boiler, Union.... 81
Malleable Iron, Compression, Dresser..... 14
Malleable Iron, Hydraulic, Walworth..... 53
Malleable Iron, Railing.....56–58
Malleable Iron, Screwed, Heavy.. 55
Malleable Iron, Screwed, Standard.....50–52
Malleable Iron, Screwed, 300-Pound.....54, 55
Malleable Iron, Union..... 81
Malleable Iron, Weights of..... 52
Mixing Valve, Knee Control.....369
Monoflo, Cast Iron, B & G.....339
Pipe, Stove, Fire Clay.....215

F Page

Fittings—
Railing, Brass..... 58
Railing, Malleable Iron.....56–58
S.A.E., Brass, Imperial..... 93
Semi-Steel, Ammonia, Vogt..... 63
Service Pipe, Chase.....513, 514
Sewer Pipe, Vitrified Clay...536, 537
Shower.....455, 456
Shower and Bath, Combination.....460, 461
Slip, Tank, Copper, Flared, Chase..... 91
Slip Joint, Cast Brass, Casing.....496, 497
Soil Pipe, Cast Iron.....522–531
Solder, Cast Brass, Casing...496, 497
Solder, Cast Bronze, Chase....86–90
Solder, Wrought Copper, Chase.86–90
Sprinkler, Cast Iron..... 22
Stainless Steel, Flanged..... 68
Stainless Steel, Screwed..... 68
Steel, Ammonia, Vogt..... 63
Steel, Flanged, Lightweight Pipe.. 9
Steel Pipe, Dresser.....14–17
Supply, Lavatory, Wrist Control..370
Supply and Drain, Bath.....461
Supply and Drain, Lavatory.466, 467
Supply and Drain, Lavatory, Wrist Control.....369
Supply and Shampoo, Lavatory..467
Terminal, Copper, Flared, Chase.. 91
Threadless, Brass, Flagg-Seal..... 86
Trench Brace, Duff-Norton.....315
Tube, Brass, S.A.E., Imperial.... 93
Tube, Copper, Flared, Chase...90, 91
Union, Malleable Iron..... 81
Urinal Stall.....474
Vent, Brass.....509
Vent, Hub, Drainage, Richmond.. 32
Vitrified Clay, Sewer Pipe...536, 537
Wall Coping.....213
Water Main, Cast Iron..... 13
Welding, Bonney..... 70
Welding, Tube-Turn.....71–78
Welding, Watson-Stillman..... 69
Wrought Copper, Solder, Chase.86–90

Fittings Brushes, Copper..... 95
Clamps, Jewel..... 79
Tongs, Williams.....272

Fitzall Lantern Globes, Dietz.....292

Fixtures—
Hospital.....366–370
Hydrotherapeutic.....368, 369

Fixtures and Lavatories, Dental, Combined.....396

Flagg Boxes, Fill, Tank.....148
Unions, Flange, Malleable Iron... 80
Vents, Air.....147

Flagg-Seal Fittings, Brass..... 86

Flake Graphite.....251

Flange Clamps, Jewel..... 79
Gaskets, Closet Floor.....492
Packings, Leather.....221
Rings, Closet Floor.....492
Unions, Brass, Extra Heavy..... 85
Unions, Brass, Standard..... 85
Unions, Cast Iron, Extra Heavy.. 25
Unions, Cast Iron, Standard..... 25
Unions, Cast Iron, Weights of....547
Unions, Forged Steel, Vogt..... 62
Unions, Malleable Iron, Flagg.... 80
Unions, Malleable Iron, Hydraulic..... 81
Unions, Malleable Iron, Standard..... 80
Unions, Welding, Watson-Stillman..... 69

Flanged Fittings, Brass, Extra Heavy..... 85

F Page

Flanged Fittings, Brass, Standard.. 85
Fittings, Cast Iron, Extra Heavy.....41–48
Fittings, Cast Iron, Sprinkler..... 22
Fittings, Cast Iron, Standard..33–40
Fittings, Cast Steel, 150-Pound... 65
Fittings, Cast Steel, 300-Pound... 65
Fittings, Cast Steel, 600-Pound... 66
Fittings, Cast Steel, 900-Pound... 67
Fittings, Cast Steel, 1500-Pound.. 67
Fittings, Forged Steel, Vogt....61–63
Fittings, Semi-Steel, Ammonia, Vogt..... 63
Fittings, Stainless Steel..... 68
Fittings, Steel, Lightweight Pipe.. 9
Pipe, Cast Iron..... 12
Y Bases, Pop Safety Valve, Lonergan.....158

Flanges—
Ammonia, Welding, Vogt..... 63
Blind, Cast Iron, Extra Heavy... 47
Blind, Cast Iron, Standard..... 39
Blind, Forged Steel, Tube-Turn... 78
Blind, Stainless Steel..... 68
Brass, Railing..... 58
Canopy, Brass.....496
Cast Iron, Floor..... 25
Cast Iron, Water Main..... 13
Cast Iron, Weights of.....547
Companion, Brass, Extra Heavy.. 85
Companion, Brass, Standard..... 85
Companion, Cast Iron, Extra Heavy.....47, 48
Companion, Cast Iron, Standard.....39, 40
Companion, Cast Iron, Weights of.547
Companion, Forged Steel, Tube-Turn.....77, 78
Companion, Forged Steel, Vogt... 61
Companion, Stainless, Steel..... 68
Expanded, Stainless Steel..... 68
Faucet, Brass.....496
Floor, Brass, Railing..... 58
Floor, Cast Iron..... 25
Floor, Closet.....492, 532
Floor, Malleable Iron, Railing.... 57
Hose, Welded.....228
Lapped, Forged Steel..... 75
Malleable Iron, Railing.....56–58
Neck, Welding, Tube-Turn..... 76
Neck, Welding, Vogt..... 63
Reducing, Cast Iron, Extra Heavy..... 48
Reducing, Cast Iron, Standard.... 40
Reducing, Forged Steel, Tube-Turn..... 78
Rod, Shower Curtain.....459
Roof.....532
Screwed, Brass..... 85
Screwed, Forged Steel, Tube-Turn.....77, 78
Screwed, Forged Steel, Vogt..... 61
Screwed, Stainless Steel..... 68
Slip-On, Forged Steel, Tube-Turn.....77, 78
Solid, Cast Iron, Extra Heavy.... 47
Solid, Cast Iron, Standard..... 39
Spud, Closet..... 496
Stainless Steel..... 68
Welding, Ammonia, Vogt..... 63
Welding, Forged Steel, Tube-Turn.....76–78
Welding, Forged Steel, Vogt..... 63
Welding, Stainless Steel..... 68

Flanges and Bells, Cast Iron, Water Main..... 13

Flanges and Spigots, Cast Iron, Water Main..... 13

Flanging Tools, Chase..... 94

Flared Fittings, Copper, Chase..90, 91

F

Page

Flared Fittings, Copper, Underground Service, Chase 514
Flarers, Tube, Wiedeke 284
Flaring Tools, Imperial 94
Flaring and Burnishing Tools, Imperial 94
Flaring and Cutting Tools, Tubing. 93
Flashings, Roof 532
Flat Steel Tapes, Waste Cleaning 294, 295
Flax Packing 217, 219
Flexible Coiled Springs, Waste Cleaning 294, 295
Joints, Barco 182
Metal Hose 229–232
Float Rods, Closet Tank 490
Valve Washers 495
Valves, Closet Tank 489, 490
Valves, Klipfel 151
Float Type Air Conditioners, Sunbeam 318
Float and Thermostatic Traps, Hoffman 360
Traps, Sarco 361
Floats—
Ball, Seamless 151
Closet Tank 490
Copper 490
Tank 151
Flo-Control Valves, B & G ... 339, 340
Floor Chisels, Baltimore 298
Drains 515–518, 522
Drains and Traps, Combined 517
Flange Gaskets, Closet 492
Flange Rings, Closet 492
Flanges, Brass, Railing 58
Flanges, Cast Iron 25
Flanges, Closet 492, 532
Flanges, Malleable Iron, Railing 57
Stands, Valve, Kennedy 539
Valves, Urinal, Sloan 485
Floor and Ceiling Plates, Combination 364
Florence Heaters, Water 503
Flour Bins and Sifters, Berger 402
Control Systems, Thrush 341
Control Valves, B&G 339, 340
Control Valves, Thrush 341
Controls, Boiler Water, B & G 339, 340
Flue Cleaner, Boyer 256
Cleaners 285
Doors 286
Information, Chimney 550
Lining, Fire Clay 215
Pipe 505
Pipe Fittings 505
Rings, Fire Clay 215
Fluid, Soldering, Nokorode 509
Fluids, Boiling Points of 552
Flush Assemblies 444, 445
Balls 492
Connections, Closet 491
Pipe Holders, Closet 490
Pipes, Closet 491
Valve Overflow Tubes, Closet Tank 490
Valve Piston Units 486, 488
Valves, Nibco 489
Valves, Sloan 482–485
Valves, Speakman 486–488
Valves, Watrous 485, 486
Flux, Soldering 509
Folding Rules, Lufkin 305
Foot Control Pop-Up Drains 370

F

Page

Foot Control Supply Valves ... 369, 370
Valve Leathers 222
Valves 201
Force Cups 296
Pumps, Double-Acting 195
Pumps, Gas Main 297
Pumps, House 195
Pumps, Set-Length 196
Force and Suction Pumps, Plumbers' 297
Forced Draft Units, Automatic 320
Force-Feed Lubricators, Manzel ... 184
Forged Steel Fittings, Flanged, Vogt 61–63
Fountains—
Drinking 446–449
Wash 423
Fountains and Cuspidors, Drinking, Combined 447
Fountains and Water Coolers, Combined 449, 450
Frames—
Manhole 546
Saw, Hack, Millers Falls 280
Tank, Simplex 505
Frames and Covers, Manhole 546
Fresh Air Inlets, Cast Iron, Soil Pipe 529
Friction Lighters 287
Friction of Water in Elbows 551
of Water in Pipes 548
Frost-Proof Closets, Vogel 430, 431
Fuel Information 553
Oil Hose 227
Fuller Balls 495
Stems, Adjustable 494
Furnace Blower-Filter Units, Sunbeam 319
Brushes 286
Bulbs, Rubber 492
Controllers, Combination, Minneapolis-Honeywell 354
Lining 209
Pipe 321
Pipe Fittings 321
Scoops, Apron Brand 305
Furnace and Stove Cement 253
Furnaces—
Insto-Gas 289
Melting, Lead 290
Soldering, C & L 290, 291
Soldering, Insto-Gas 289
Warm-Air, Sunbeam 318
Furnaces and Heaters, Melting, Combined, Hauck 290
Furnacestats, Minneapolis-Honeywell 354
Fusible Plugs, Sherman 169

G

G-B-C Fire-Tenders 320
G-K Sewer Joint Compound 252
GTD Reamers, Burring 269
Reamers, Pipe 269, 270
Taps, Pipe 271
Taps and Drills, Pipe 271
Gages, see Gauges
Garage Air Hose 226
Drains, Josam 517
Hydrants, Vogel 541
Traps, Saaco 519
Garbage Burners, Water Heating, Kewanee 330
Cans, Galvanized 188

G

Page

Garden Hose 224
Hose Valves 115
Gardiner Solder 509
Gardner-Denver Governors, Engine 155
Gas Cock Wrenches 144
Fitters' Proving Pumps and Mercury Columns 297
Fitters' Proving Pumps and Testing Gauges 297
Heaters, Wall, Lawson 338
Holder Hose 230
Main Caulking Irons 300
Main Force Pumps 297
Main Yarning Irons 300
Purgers, Refrigerant, Armstrong .. 163
Service Cocks 144
Tanks, Prest-O-Lite 288
Valves, Minneapolis-Honeywell ... 355
Water Heaters 499, 500, 503
Gasket Compound 253
Cutters 220
Tools, Baltimore 299
Gaskets—
Asbestos, Flanged Valves and Fittings 49
Manhole and Handle 220
Barrel 221
Basin 495
Boiler Tube 221
Cloth Inserted 49
Collar Clamp, Dresser 17
Corrugated Copper 49
Coupling, Dresser 17
Fittings, Dresser 17
Flange, Closet Floor 492
Flanged Valves and Fittings 49
Gauge Glass 169
Metal, Akron 49
Pipe, Dresser 17
Rubber 49
Sectional 220
Sink 495
Sleeve, Pipe, Dresser 17
Soft Steel Jacket 221
Wire Inserted Asbestos 220
Gasoline Cans 188
Gate Valves, McDonald 147
Hose 227
Meters 545
Shut-Off Cocks, Imperial 145
Storage Tanks 150
Gate Valves, All-Iron, Jenkins 119
Valves, All-Iron, Lunkenheimer 124F
Valves, Brass, Hose 114, 115
Valves, Brass, Jenkins 112–114
Valves, Brass, Lunkenheimer. 124A–124D, 128, 129
Valves, Brass, O-B 136
Valves, Brass, Solder, Chase 134
Valves, Brass, Solder, Jenkins 114
Valves, Cast Steel, Jenkins 123
Valves, Forged Steel, Vogt ... 139, 140
Valves, Hub End, Kennedy 539
Valves, Iron Body, Indicator Post, Kennedy 539
Valves, Iron Body, Jenkins ... 119–122
Valves, Iron Body, Lunkenheimer. 124A–124D, 131, 132
Valves, Iron Body, Underwriters', Jenkins 121
Valves, Lock, McDonald 147
Valves, Monel, Lunkenheimer ... 124E
Valves, Stainless Steel, Jenkins ... 122
Valves, Steel, Lunkenheimer 124E, 133, 134
Gates—
Molasses 146
Oil 146

G

Page

Gates Sheaves, V Belt....247–250
V Belting....245, 246
V Belts....245, 246
V-Flat Drives....246

Gauge Cocks....165, 167
Glass Cutters....167
Glass Gaskets....169
Glass Washers....168, 169
Glass Washers and Preservers....169
Glasses....168
Hand Pullers, Lonergan....169
Jacks, Lonergan....169
Syphons, Steam....169
Testers, Pressure, Ashcroft....170

Gauges—
Altitude, Lonergan....172
Ammonia, Lonergan....172
Compound, Lonergan....171
Hydraulic, Lonergan....172
Liquid, Lunkenheimer....164
Liquid Level....149
Oil....149
Pressure....171–173, 176
Retard....173
Tank....149
Test, Inspectors'....173
Vacuum, Lonergan....171, 172
Water, Consolidated....164
Water, Expansion Tank....164
Water, Lonergan....165
Water, Lunkenheimer....164
Water, Prismatic....166
Water, Reliance....165, 166
Water, Self-Cleaning....164
Wire, Comparison of....556

Gauges and Hot Water Thermometers, Combination...173

Gauges and Proving Pumps, Testing, Gas Fitters'....297

Geared Pumps, Oberdorfer....191

General Heaters, Water, Indirect....346, 347
Heater-Tanks....504
Silencers, Water Hammer....549

Genuine Wrought Iron Pipe, Byers....4, 5

Gits Covers, Oil Hole....186
Cups, Oil....186, 187

Glass Cutters, Gauge....167
Discs, Lunkenheimer....186
Filling Faucets....470
Gaskets, Gauge....169
Shelves, Bathroom....477, 479, 480
Washers, Gauge....168, 169
Washers and Preservers, Gauge...169

Glasses—
Gauge....168
Oil Cup, Lunkenheimer....186
Sight, Pipe Line....148

Glaze, Porcelain, Tilette....253

Globe Valves, All-Iron, Jenkins....117
Valves, All-Iron, Lunkenheimer.124F
Valves, Brass, Hose, Jenkins....115
Valves, Brass, Jenkins....108–110, 114, 115
Valves, Brass, Lunkenheimer....124B–124D, 124H, 125–127
Valves, Brass, O-B....135
Valves, Brass, Solder, Chase....134
Valves, Brass, Solder, Jenkins....114
Valves, Cast Steel, Jenkins....122
Valves, Forged Steel, Ammonia, Vogt....64
Valves, Forged Steel, Vogt...136, 137
Valves, Iron Body, Jenkins..116, 117
Valves, Iron Body, Lunkenheimer....124A–124C, 126, 130
Valves, Semi-Steel, Ammonia, Vogt....64

G

Page

Globe Valves, Stainless Steel, Jenkins....122
Valves, Steel, Lunkenheimer....124E, 124H, 133, 134

Globes, Lantern, Dietz....292

Glossgard....256

Goggles—
Oxweld....288
Welding....288

Golden State Washers, Faucet....494

Gooseneck Spouts....370

Goosenecks, Lead....513

Gouges—
Baltimore....299, 301
Sewer Cleaning....296

Goulds Pumps, Suction, Diaphragm....191

Governors—
Engine, Gardner-Denver....155
Heating System, Kainer....343
Pump, Fisher....155

Grab Bars....479
Bars and Soap Holders, Combined....478, 479

Grabler Clamps, I-Beam....100

Graph-Air Guns, Dixon....251

Graphite—
Flake....251
Lubricating....251

Graphite Compound, Pipe Joint....251
Paste....252

Grates—
Hub, Soil Pipe, Swett....519
Vent....519

Gravel Basins....155
Catch Basins....155

Grease Cups, Hunter....183
Cups, Lunkenheimer....124H, 183
Cups, Plain Steel....183
Interceptors, Josam....416, 417
Traps....416, 417
Traps, San-Equip....534
Traps, Vitrified, Sewer Pipe....537

Greenlee Bits, Auger....306
Pushers, Pipe....280

Grinding Wheels....282

Grinnell Clamps, Pipe....100
Rolls and Plates, Pipe....100, 101
Stands, Roll, Pipe....100, 101
Supports, Pipe....101

Grips, Drill Holder, Rawl-Grip....107

Griswold Dampers, Stove Pipe....506

Guards—
Gauge Cock, Vogt....165
Rim, Service Sink....421

Guide Holders, Overflow Tube....491

Guns—
Air, Jenkins....124
Air, Lunkenheimer....124G, 125
Blow, Jenkins....124
Blow, Lunkenheimer....124G, 125
Graph-Air, Dixon....251
Lubricating, Dixon....251

Gutter Drains, Swimming Pool, Josam....518

H

H Branches, Cast Iron, Soil Pipe...527

Hack Saw Blades, Barnes....281
Saw Frames, Millers Falls....280
Saws, Barnes....281
Saws, Rotary, Misener....280

Hair Felt....208
Interceptors, Josam....417

H

Page

Half Y Branches, Cast Iron, Soil Pipe....525

Half and Half Solder....508

Hall-Mack Bathroom Accessories....478–482
Cabinets, Bathroom....480–482
Mirrors....482

Halsey Taylor Drinking Fountains....449
Heads, Drinking Fountain....450
Regulators, Stream, Drinking Fountain....451
Water Coolers, Electric....450
Water Coolers and Drinking Fountains....449, 450

Hammers—
Blacksmiths'....304
Carpenters', Pexto....304
Caulking, Mueller....300
Claw, Pexto....304
Engineers'....284
Machinists'....304
Nail, Pexto....304
Sledge....284

Hammer-Set Anchors....105

Hancock Ejectors....179
Inspirators....177

Hand Chucks, Phillips....105
Hole Traps, Vitrified, Sewer Pipe.537
Pullers, Gauge, Lonergan....169
Pumps, Watson-Stillman....170

Handle Bar Unions, Forged Steel... 80
Screws, Quaturn....493

Handles—
Auger, Millers Falls....306
File....282
Jack, Duff-Norton....315
Soldering Copper....297
Valve, Radiator....142

Handy Gate Valves, Brass, Lunkenheimer....124D, 129
Gate Valves, Iron Body, Lunkenheimer....124D, 131

Handy-Andy Vise Stands....277

Hanger Adjusters, Pipe.... 99
Clamps, Pipe....100, 101
Iron, Pipe.... 99
Sockets, Pipe.... 99
Steel Pipe....100
Strapping, Perforated....100

Hangers—
Bath....371
Pipe, Blake.... 98
Pipe, F & M....98, 99
Pipe, Modern.... 99

Hartford Racks, Hose....237

Hauck Furnaces and Heaters, Melting, Combined....290

Headers, Wrought Steel.... 7

Heads—
Die, Bolt, Reed....257
Die, Bolt, Toledo....260
Die, Rod, Pump, Toledo....260
Drinking Fountain....450, 451
Pipe, Exhaust, Swartwout....157
Sewer Rod....294
Shower....456, 457
Spray, Portable, Sherman....237
Spray, Sprinkler System....237
Welding, Tube-Turn.... 74

Heat Regulators....351–355

Heater Brushes....286
Information....550

Heaters—
Blast, Modine....322
Electric, Wall, Lawson....338
Gas, Wall, Lawson....338

H

Page

Heaters—
Insert, Wall, Lawson....338
Laundry Tank....332
Radiant, Lawson....338
Room, Arcola....327
Storage, Hot Water, Whitlock....504
Unit, Modine....322
Water, Arco....331
Water, Arcola....331
Water, Auxiliary....346
Water, Direct, Penberthy....180
Water, Electric....501
Water, Fire Pot, Hot Dog....346
Water, Garbage Burning, Kewanee....330
Water, Gas....499, 500, 503
Water, Ideal....331, 332
Water, Indirect, B & G....347
Water, Indirect, Excelso....347
Water, Indirect, General....346, 347
Water, Indirect, Thrush....348
Water, Kerosene....503
Water, Oil Burning....503
Water, Steam-Operated, Penberthy....180
Water, Storage....499–501

Heaters and Boosters, Water, Direct, Adjusto....347

Heaters and Furnaces, Melting, Combined, Hauck....290

Heater-Tanks, General....504

Heating Boilers, American....323
Boilers, Arco....329
Boilers, Arcola....327
Boilers, Arcoliner....326
Boilers, Ideal....324, 325, 327–329
Boilers, Kewanee....329, 330
Boilers, Oakmont....325
Boilers, Severn....324
System Cleaner....255
System Expansion Tanks....348
System Governors, Kainer....343
Systems, Hot Water, B & G....339
Systems, Hot Water, Size of Mains....550
Systems, Hot Water, Thrush....341
Units, Oil, Oakmont....326
Units and Storage Tanks, Combined....504

Heating and Ventilating Systems, Warm-Air....320

Hemp Packing....220

Hemp and Lead, Required for Joints....12

Henderer Pumps, Test, Hydraulic..170

Hickeys, Adjustable, Skinner....280

High Duty Valves, Brass, Lunkenheimer....124D

Hinges—
Check, Closet Seat....493
Closet Seat....493
Closet Stall....475
Urinal Stall....475

Hoes, Engineers'....286

Hoffman Adapters, Valve, Radiator....362
Bulbs, Temperature....343
Circulators, Water....343
Controllers, Temperature....343
Hot Water Heating Apparatus....343
Traps....360
Valves, Control....343
Valves, Radiator....362
Valves, Vent....362

Hoffman-Economy Pumps, Condensation....348, 349

Hoists, Chain, Yale....313

H

Page

Holdback Hooks and Chains, Curtain....459

Holders—
Guide, Overflow Tube....491
Pipe, Flush, Closet....490
Pipe, Monitor....200
Pipe, Supply, Closet....490
Sewer Rod....294
Soap....477–480
Toilet Paper....477–480
Tool, Rawldrill....107
Toothbrush....479, 480
Tumbler....477–480
Tumbler and Toothbrush, Combined....477–480

Holders and Grab Bars, Soap, Combined....478, 479

Hole Covers, Faucet....473
Covers, Oil, Gits....186
Saws, Misener....280

Holyoke Heaters, Water, Kerosene.503

Home Insulating Hose, Rock Wool.226

Hook Plates, Cast Iron....101

Hooks—
Bathroom....477–480
Belt, LX....244
Chandelier, Malleable Iron, Standard....50, 51
Clinker, Engineers'....286
Pipe, Steel Wire....101
Shave....297
Soil Pipe....529

Hooks and Chains, Holdback, Curtain....459

Hopper Combinations....430, 431

Hoppers, Enameled....432

Horsepower—
Belting....554
Boiler....551

Horsepower Information....551, 553

Hose—
Acetylene....225
Acid....226
Air....225, 226
Ball Bearing....230
Brewers'....225
Cotton....228
Creamery....224
Cutting....225
Distillate....227
Exhaust....231, 232
Fire....228
Flexible, Metal....229–232
Fuel Oil....227
Garage....226
Garden....224
Gas Holder....230
Gasoline....227
Insto-Gas....289
Insulating, Rock Wool....226
Interlocking....230, 231
Linen....228
Mill....228
Oxygen....225
Paint Spray....226
Pneumatic....225
Steam....224, 225
Suction....226, 227
Tank Unloading....227
Water....223, 224
Welding....225

Hose Bushings....232
Cabinets, Fire....238
Clamps....232, 234, 235, 239
Connections, Bath....460
Connections, Bath Faucet....460
Coupling Expanders, Elkhart....233
Couplings, Boss....232

H

Page

Hose Couplings, Dix-Lock....233
Couplings, Expansion Ring....233
Couplings, McDonald....234
Couplings, Rex-Tite....228, 230
Couplings, Rex-Tube....230, 231
Couplings, Sherman....233
Couplings, Solder....228
Couplings, Steam....233
Couplings, Water....233
Faucets, Compression....468, 469
Faucets, Ground Key....469
Flanges, Welded....228
Menders, Sherman....233
Nipples, Air Gun, Jenkins....124
Nipples, Brass....232, 234
Nipples, Fire....239
Nipples, King....234
Nipples, Lunkenheimer....124G
Nipples, Sherman....234
Nipples, Steel....234
Nozzles....236
Nozzles, McDonald....146
Racks....237, 239
Reducers, Brass....232
Reels....237
Spanners....235
Valves, Brass....114, 115
Valves, Fire Line....115
Valves, Garden....115
Washers, Rubber....235

Hospital Fixtures....366–370
Interceptors, Josam Marsh....417

Hot Oil Packing....218, 219
Rolled Copper Sheets....506
Water Heating Systems, B & G....339
Water Heating Systems, Size of Mains....550
Water Heating Systems, Thrush..341
Water Meters....544
Water Storage Heaters, Whitlock.504
Water Storage Tanks....505
Water Supply Boilers....331, 332
Water Supply System Cleaner....255
Water Thermometers....173–175
Water Thermometers and Gauges, Combination....173

Hot Dog Heaters, Water, Fire Pot..346

House Force Pumps....195
Heating Boilers, American....323
Heating Boilers, Arco....329
Heating Boilers, Arcola....327
Heating Boilers, Arcoliner....326
Heating Boilers, Ideal....324, 325, 327–329
Heating Boilers, Kewanee....329, 330
Heating Boilers, Oakmont....325
Heating Boilers, Severn....324

Hub Drainage Fittings, Richmond.. 32
Grates, Soil Pipe, Swett....519

Hubs—
Cast Iron, Soil Pipe....528
Saddle, Connolly....530
Saddle, Sewer Pipe....537
Saddle, Soil Pipe....530

Humidifiers—
Air Conditioner, Sunbeam....318
Unit, Armstrong....162

Humidistats, Sunbeam....351

Humidity Controllers, Minneapolis-Honeywell....352
Controllers, Sunbeam....351

Hunter Cups, Grease....183

Hydrant Cock Wrenches and Cleanout Spoons, Combined....235
Stops....513
Wrenches and Spanners, Combined....235

Hydrant and Standpipe Control Units....235

H

Page

Hydrants—
Eclipse....541
Fire....540, 541
Garage, Vogel....541
Total Eclipse....541
Vogel....541

Hydraulic Discs, Leather....221
Fittings, Malleable Iron, Walworth.... 53
Flange Unions, Malleable Iron.... 81
Gauges, Lonergan....172
Jacks, Watson-Stillman....314
Packing....217, 219
Pipe Benders....279
Pipe Pushers, Greenlee....280
Test Pumps....170
Washers, Leather....221

Hydro-Pneumatic Tanks....204, 205

Hydrotherapeutic Fixtures....368, 369

Hyrate Cement, Refractory....209

I

I-Beam Clamps....100

Ice Plant Rubber Tubing....227
Water Faucets, Self-Closing....470

Ideal Boilers, Heating....324, 325, 327–329
Boilers, Hot Water Supply....331, 332
Heaters, Water....331, 332
Stands, Boiler, Range....502
Tanks, Expansion....348
Valves, Radiator....358, 363

Immersion Aquastats, Minneapolis-Honeywell....353, 354

Imperial Benders, Tube.... 94
Cocks, Shut-Off....145
Cutters, Tube.... 93
Faucets, Barrel....146
Fittings, Brass, Compression.... 92
Fittings, Brass, S.A.E.... 93
Flaring Tools.... 94
Flaring and Burnishing Tools.... 94
Flaring and Cutting Tools, Tubing.... 93
Tubing, Steel.... 11

Increasers—
Acid-Proof, Drain Pipe, Duriron....520
Cast Iron, Drainage.... 31
Cast Iron, Soil Pipe....528
Cast Iron, Water Main.... 13
Drain Tile, Unglazed....539
Vitrified, Sewer Pipe....537

Indicator Post Gate Valves, Iron Body, Kennedy....539
Posts, Valve, Kennedy....539

Indirect Water Heaters, B & G....347
Water Heaters, Excelso....347
Water Heaters, General....346, 347
Water Heaters, Thrush....348

Induction Motors, Damper, Minneapolis-Honeywell....355

Infants' Slabs, Enameled....368

Information—
Control Circuit....351
Useful....547–556

Ingalls Cleaners, Flue....285
Tube Scrapers and Brushes, Combined....285

Ingot Lead Moulds....509

Injectors—
Metropolitan....178
Penberthy....178
U.S....176

Inlet Connections, Swimming Pool, Josam....518

I

Page

Inlets, Fresh Air, Cast Iron, Soil Pipe....529

Insert Heaters, Wall, Lawson....338

Insertable Joints, Kafer....531
Joints, Sisson....530
Soil Pipe Fittings....530, 531

Inserts, Concrete, Modern....100

Inspectors' Test Gauges....173

Inspirators, Hancock....177

Installation Plans, Septic System, San-Equip....533

Instant-Lite Lanterns, Coleman....292

Insto-Gas Cylinders....289
Furnaces....289
Hose....289
Torches....289

Insulating Cement....208
Fire Brick....211
Hose, Rock Wool....226

Insulation—
Block....207
Mineral Wool....208
Pipe, Sectional....207
Rock Wool....208
Sheet....207

Intakes, Baseboard, Return Air....321

Interceptors—
Dental Sink, Josam....417
Grease, Josam....416, 417
Hair, Josam....417
Hospital Sink, Josam-Marsh....417
Sediment, Josam....417
Surgical Sink, Josam....417

Interlocked Exhaust Fittings, Rex-Tube....231

Interlocking Hose....230, 231

Invader Belting....240

Iron, Hanger, Pipe.... 99

Iron Cement, Smooth-On....253

Irons—
Caulking....298–300
Soldering....297
Yarning....300

Irwin Bits, Expansive....306

J

J.R.S. Cutters, Pipe....269

Jack Chain....312
Handles, Duff-Norton....315
Screws, Duff-Norton....315
Spray Heads, Sprinkler System....237

Jackets, Tank, Asbestos....504

Jacks—
Gauge, Lonergan....169
Hydraulic, Watson-Stillman....314
Inverted Type, Duff-Norton....315
Ratchet, Duff-Norton....314, 315
Screw, Duff-Norton....315
Trip, Duff-Norton....314

Jaw Caps, Vise, Reed....276

Jenkins Discs, Valve....123
Guns, Air....124
Valves, Angle, All-Iron....117
Valves, Angle, Brass....108–110, 114, 115
Valves, Angle, Brass, Hose....115
Valves, Angle, Brass, Solder....114
Valves, Angle, Cast Steel....122
Valves, Angle, Iron Body....116, 117
Valves, Angle, Stainless Steel....122
Valves, Blow-Off....124
Valves, Check, Brass....110, 111, 114

J

Page

Jenkins Valves, Check, Brass, Solder....114
Valves, Check, Iron Body....117–119
Valves, Corrosion-Resisting....122
Valves, Gate, All Iron....119
Valves, Gate, Brass....112–114
Valves, Gate, Brass, Hose....114, 115
Valves, Gate, Brass, Solder....114
Valves, Gate, Iron Body....119–122
Valves, Gate, Stainless Steel....122
Valves, Globe All-Iron....117
Valves, Globe, Brass....108–110, 114, 115
Valves, Globe, Brass, Hose....115
Valves, Globe, Brass, Solder....114
Valves, Globe, Cast Steel....122
Valves, Globe, Iron Body....116, 117
Valves, Globe Stainless Steel....122
Valves, Hose, Brass....115
Valves, Needle, Brass....110
Valves, Pump....223
Valves, Quick-Opening, Brass....108, 112, 124
Valves, Quick-Opening, Iron Body....119
Valves, Radiator....357
Valves, Rapid Action....112
Valves, Solder, Brass....114
Valves, Stop and Check, Iron Body....117
Valves, Whistle....124
Valves, Y....124
Wheels, Valve....142

Jersey Creamery Hose....224

Jet Pumps, Blakeslee....179
Pumps, Deming....193

Jewel Clamps.... 79
Markers, Pipe.... 79

Jiffy Boiler Plugs....292

John Sunshine Cement, Spud....253

Johnson Cutters, Washer....220
Dressers, Faucet Seat....303
Solder Pots....290

Joint Cement, Pipe....252
Chisels, Baltimore....300
Clamps, Bell.... 95
Clamps, Pipe.... 95
Compound, Pipe....251–253
Compound, Sewer....252, 253
Compound, Water Main....508
Runners, Lead, Asbestos....290
Sealing Compound....253

Jointless Fire Brick....209

Joints—
Ball, Barco....182
Ball, Shower....457
Expansion, Adsco....181
Expansion, Asphalt Fiber....215, 216
Expansion, Brass....180
Expansion, Copper....181
Expansion, Iron Body....180
Expansion, Serviced....216
Flexible, Barco....182
Insertable, Kafer....531
Insertable, Sisson....530
Pavement....215, 216
Prepared, Bell-and-Spigot.... 12
Swing, Lunkenheimer....181
Swing, McDonald....148
Swivel, Barco....182

Josam Cesspools....515
Connections, Expansion Joint, Drain....515
Connections, Swimming Pool....518
Drains....514–518
Drains and Traps, Combined....517
Interceptors....416, 417
Shock Absorbers....546
Valves, Mixing....456
Valves, Sewer....532

J

Page

Josam-Marsh Interceptors.....417
Justrite Cans, Oily Waste.....188
Nozzles, Hose.....236
Jute Packing.....219, 220

K

Kafer Insertable Joints.....531
Insertable Soil Pipe Fittings.....531
Kainer Governors, Heating System.343
Kalktite Asphalt Plastic Compound.....253
Kennedy Indicator Posts.....539
Kits, Tool.....308
Stands, Floor, Valve.....539
Valves, Gate, Iron Body, Indicator Post.....539
Wrenches, Valve.....546
Kenwood Furnaces, Warm-Air.....318
Kerosene Lanterns.....292
Water Heaters.....503
Kewanee Boilers.....329, 330
Garbage Burners, Water Heating.330
Unions, Walworth.....80
Key Paste, Graphite.....252
Keys—
Faucet, Lawn.....470
Service Box, Mueller.....546
Valve, Kennedy.....546
Keystone Joints, Expansion, Asphalt Fiber.....215, 216
Strips, Center, Asphalt.....216
Key-Tite Compound, Pipe Joint...252
King Heaters, Laundry Tank.....332
Nipples, Hose.....234
King-Clip Gate Valves, Lunkenheimer 124B, 124D, 124F, 131
Kisco Controls, Switch.....349
Kisco-Bilt Return-To-Boiler Systems.....349
Kitchen Cabinets, Steel, Berger....402
Sinks, Enameled.....403–412
Sinks, Galvanized.....415
Sinks, Monel Metal.....413, 415
Sinks, Plain.....415
Sinks, Stainless Steel.....413, 415
Sinks, Vitreous China.....411
Kitco Valves, Pressure and Boiler Drain, Combined.....346
Kits, Tool.....308
Klingfast Belt Cement.....244
Klipfel Thermostats, Tank.....350
Valves.....151
Klixon Valves, Relief.....345, 346
Knee Control Mixing Valve Fittings.....369
Control Pop-Up Drains.....370

L

LX Hooks, Belt.....244
Labello Hose.....228
Laboratory Faucets, Mueller.....511
Nipples, Mueller.....511
Sinks, Duriron.....522
Stops, Mueller.....511
Lace Leather.....244
Lacers, Belt, Clipper.....242
Lacing—
Belt, Alligator.....244
Belt, Bristol.....244
Belt, Clipper.....243
Cut.....244
Ladles, Melting.....290

L

Page

Lag Bolts, F & M.....99
Screws, F & M.....99
Lantern Globes, Dietz.....292
Lanterns—
Instant-Lite, Coleman.....292
Kerosene.....292
Mantle, Coleman.....292
Lap-Lok Wall Coping.....213
Lapped Flanges, Forged Steel.....75
Lard Oil.....251
Large O.D. Pipe.....2
Latches—
Throw, Closet Stall.....475
Throw, Urinal Stall.....475
Laterals—
Brass, Screwed, Extra Heavy.....85
Cast Iron, Drainage.....28, 29
Cast Iron, Flanged, Extra Heavy.....46, 48
Cast Iron, Flanged, Standard..38, 40
Cast Iron, Screwed, Extra Heavy.....26
Cast Iron, Screwed, Standard 19, 24, 26
Cast Iron, Soil Pipe....525, 526, 531
Cast Iron, Water Main.....13
Cast Steel, Flanged.....66, 67
Forged Steel, Screwed, Vogt.....59
Special Tapped, Drainage, Richmond.....32
Stainless Steel, Flanged.....68
Steel, Flanged, Lightweight Pipe..9
Vitrified, Sewer Pipe.....536
Laughlin Thimbles, Wire Rope....312
Laundry Tank Heaters.....332
Tray Drain Plugs.....465
Tray Faucet Brackets.....464
Tray Faucets, Compression..463, 464
Tray Stands.....417
Trays, Alberene Stone.....419, 420
Trays, Cement.....419
Trays, Enameled.....418, 419
Trays and Sinks, Combined..411, 412
Lavatories—
Battery, Enameled.....401
Battery, Vitreous China.....394
Cabinet.....396–398
Dental, Vitreous China.....395
Enameled.....396–401
Vitreous China.....386–395
Vitreous China, Hospital....366, 367
Lavatories and Dental Fixtures, Combined.....396
Lavatory Clamps.....475
Connections.....472
Drains.....472
Drains, Pop-Up.....467
Drains, Pop-Up, Hospital.....370
Faucets, Compression.....467, 468
Faucets, Self-Closing.....468
Fitting Finishes.....454
Gaskets.....495
Plugs.....473
Stoppers.....496
Supply Fittings, Wrist Control...370
Supply Pipes.....471, 472
Supply Pipes, Hospital.....370
Supply Spouts.....370
Supply and Drain Fittings...466, 467
Supply and Drain Fittings, Wrist Control.....369
Supply and Shampoo Fittings....467
Supports.....390
Units, Hall-Mack.....479
Lawco Access Panels.....476
Cans, Ash.....188
Pails.....189
Lawn Faucet Keys.....470

L

Page

Lawn Faucets, Compression.....470
Sprinklers.....237
Lawson Boxes, Utility.....189
Heaters, Insert, Wall.....338
Heaters, Water, Storage.....499
Lay of Wire Rope.....312
Lead—
Caulking.....508
Pig.....508
Sheet.....508
Lead Bends.....507
Flange Union Couplings.....513
Joint Runners, Asbestos.....290
Melting Furnaces.....290
Moulds, Ingot.....509
Pipe.....507
Pipe Expanding Pliers.....297
Traps.....498
Wool.....508
Working Tools, Plumbers'.....297
Lead and Hemp Required for Joints.....12
Leadite.....508
Leak Compound, Boiler.....255
Leather, Lace.....244
Leather Belt Cement.....244
Belt Dressing.....245
Belting.....240
Discs and Washer, Hydraulic.....221
Packings.....221, 222
Leathers—
Foot Valve.....222
Plunger.....222
Pump.....221, 222
Valve.....222
Legs—
Bench, Steel, Lyon.....309
Sink, Adjustable.....416
Leonard Valves, Mixing.....458
Levelometer Gauges, Liquid Level.149
Levels, Carpenters', Millers Falls...305
Levels and Plumbs.....305
Lever-Operated Valves, All-Iron, Lunkenheimer.....124F
Valves, Brass.....154
Valves, Brass, Jenkins..108, 112, 124
Valves, Brass, Lonergan.....141
Valves, Brass, Lunkenheimer 124D, 124G, 129
Valves, Iron Body, Jenkins.....119
Valves, Iron Body, Lunkenheimer.....124D, 131
Levers, Closet Tank.....490
Lids, Repair, Service Box.....543
Lift Wires, Closet Tank.....490
Lifters, Eveready, Clancy.....307
Lighters, Friction.....287
Limit, Blower and Cut-In Switches, Sunbeam.....351
Limit and Blower Switches, Sunbeam.....351
Line Clamps, Pipe.....95, 96
Pipe, Youngstown.....2, 3
Pipe Couplings.....18
Valves, Loading, McDonald.....147
Linear Gaskets, Asbestos.....220
Packing.....217–219
Linen Hose.....228
Lining—
Flue, Fire Clay.....215
Furnace.....209
Liquid—
Boiler.....255
Boiler, X.....255
Bronzing.....254

L

Page

Liquid—
Chemical, Closet....256
Soldering, Nokorode....509
Liquid Boiler Seal....255
Gauges, Lunkenheimer....164
Level Gauges....149
Soap Dispensers, Watrous....476
Soap Dispensing Systems, Watrous....476
Liquidometer Gauges, Tank....149
Little Wizard Lantern Globes....292
Lanterns, Kerosene....292
Loading Line Valves, McDonald....147
Lock Cocks, Gas Service....144
Escutcheons, Mixing Valve....458
Fill Boxes, Tank....148
Gate Valves, McDonald....147
Locknuts—
Brass, Standard....83, 84
Cast Iron, Standard....20, 25
Cast Iron, Weights of....547
Malleable Iron, Standard....50–52
Stainless Steel....68
Loc-Nob Lantern Globes, Dietz....292
Locomotive Scoops....305
Tubes....11
Lonergan Bases, Y, Flanged, Pop Safety Valve....158
Cocks, Gauge....167
Gauges....165, 171, 172
Jacks, Gauge....169
Valves, Quick-Operating....141
Valves, Relief....158
Valves, Safety, Pop....157, 158
Valves, Vacuum Breaking....158
Valves, Whistle....141
Whistles....141
Long Screws....81
Sweep Fittings, Cast Iron....22
Lookout Boilers....330
Loops, Chandelier, Malleable Iron, Standard....50, 51
Low Pressure Diaphragms....222
Pressure Packing....218
Low-Water Cut-Off Switches, McDonnell....356
Cut-Offs....356
Cut-Offs and Boiler Water Feeders, Combined, McDonnell....356
Lubricated Plug Valves, Walworth....142, 143
Lubricating Graphite....251
Guns, Dixon....251
Lubricators—
Engine, Detroit....184
Engine, Lunkenheimer....184, 185
Force-Feed, Manzel....184
Graphite, Powder, Dixon....251
Sight-Feed, Lunkenheimer....124H, 184–186
Lucke Hangers, Bath Tub....371
Lucky Strike Floats, Closet Tank....490
Gaskets, Flange, Closet Floor....492
Rings, Cushion, Toilet Bowl....492
Rings, Flange, Closet Floor....492
Washers, Faucet....494
Lufkin Rules, Spring Joint....305
Tape-Rules....305
Lunkenheimer Cocks, Air....124G
Controls, Oil, Constant Level....124H, 185
Cups, Grease....124H, 183
Cups, Oil....124H, 185, 186
Discs, Glass....186
Discs, Valve....126

L

Page

Lunkenheimer Gauges, Liquid....164
Glasses, Oil Cup....186
Guns, Air....124G, 125
Joints, Swing....181
Lubricators, Engine....184, 185
Lubricators, Sight-Feed....124H, 184–186
Nipples, Hose....124G
Nozzles, Air....124G, 125
Oilers, Bottle....124H, 185
Pumps, Oil, Hand....185
Valves, Angle, All-Iron....124F
Valves, Angle, Brass....124B–124D, 124H, 125–127
Valves, Angle, Iron Body....124A–124C, 126, 130
Valves, Angle, Steel....124E, 124H, 133
Valves, Blow-Off....124E, 134
Valves, Check, All-Iron....124F, 130
Valves, Check, Brass....124B–124D, 127, 128
Valves, Check, Iron Body....124A, 124C, 130, 131
Valves, Check, Monel....124E
Valves, Check, Steel....124E, 134
Valves, Cross, Iron Body....130
Valves, Ferrenewo, Iron Body....124B, 126
Valves, Gate, All-Iron....124F
Valves, Gate, Brass....124A–124D, 128, 129
Valves, Gate, Iron Body....124A–124D, 131, 132
Valves, Gate, Monel....124E
Valves, Gate, Steel....124E, 133, 134
Valves, Globe, All-Iron....124F
Valves, Globe, Brass....124B–124D, 124H, 125–127
Valves, Globe, Iron Body....124A–124C, 126, 130
Valves, Globe, Steel....124E, 124H, 133, 134
Valves, High Duty, Brass....124D
Valves, Marine Service....134
Valves, N-M-D, Brass....124B, 124D, 124G, 125, 128
Valves, Needle, Brass....124H, 127
Valves, Needle, Steel....124H
Valves, Non-Return....124E, 133, 134
Valves, Pop....124G
Valves, Quick-Operating, Brass....124D, 124G, 129
Valves, Quick-Operating, Iron Body....124D, 131
Valves, Relief....124G
Valves, Renewo, Brass....124B, 124C, 126, 127
Valves, Safety, Pop....124G
Valves, Sight Feed....185
Washers, Oil Cup....186
Lutz Handles, File....282
Lyon Benches, Arc Welding....308
Bins, Parts and Supplies....308
Boxes, Steel....309
Cabinets, Wardrobe and Storage, Combined....308
Legs, Bench, Steel....309
Racks, Bar....309
Shop Equipment....308, 309
Stands, Tool....309

M

M-VB Ball Cocks....489
Machine Bolts....102, 103
Machines—
Pipe, Toledo....261–263
Pipe, Williams....266
Pipe and Bolt, Beaver....266, 267
Reseating, Valve, Dexter....303
Tapping, Mueller....543

M

Page

Machinists' Hammers....304
Vises, Reed....276
Magnesia Cement....208
Pipe Covering....207
Magnetic Gas Valves, Minneapolis-Honeywell....355
Magnolia Metal....508
Main Caulking Irons....300
Tapping Machines, Mueller....543
Yarning Irons....300
Mains, Steam, Sizes of....550
Mains and Branches, Table of....552
Malleable Iron Fittings, A.A.R., Walworth....53
Fittings, Ammonia, Vogt....63
Fittings, Boiler, Union....81
Fittings, Compression, Dresser....14
Fittings, Hydraulic, Walworth....53
Fittings, Railing....56–58
Fittings, Screwed, Heavy....55
Fittings, Screwed, Standard....50–52
Fittings, Screwed, 300-Pound....54, 55
Fittings, Union....81
Fittings, Weights of....52
Manhole Covers and Frames....546
Frames....546
Steps....546
Manicuring Tables, Vitreous China....395
Manifolds, Meter, Condensation, Adsco....545
Manila Rope....310
Mantle Lanterns, Coleman....292
Manzel Lubricators, Force-Feed....184
Marble Bolts....475
Marco Augers, Closet....295
Cleaners, Pipe, Top Snake....295
Springs, Coiled, Flexible, Waste Cleaning....295
Tapes, Flat Steel, Galvanized....295
Marine Service Valves, Lunkenheimer....134
Valve Parts, Flush....485
Markers, Pipe, Jewel....79
Martin Vise Stands and Pipe Benders....278
Marvel Washers, Gauge Glass....168
Mason Valves, Reducing, Pressure....152, 153
Masoneilan Gauges, Pressure, Recording....176
Thermometers, Recording....176
Valves, Reducing, Pressure....153, 154
MasoNeilan Valves, Reducing, Pressure....154
Masonry Drill Points, Carboloy....302
Materials....212
Mastic Board Strips, Keystone....216
Matting—
Rubber, Corrugated....216
Switchboard....216
McAlear Strainers, Suction....164
McDaniel Tees, Suction....180
McDonald Bibbs, Oil....146
Bushings, Double Tapped....148
Caps, Fill, Tank....148
Caps, Tank, Truck....147
Couplings, Hose....234
Couplings, Reducer....146
Faucets, Filling, Radiator....145
Faucets, Tank, Truck....147
Goosenecks....513
Joints, Swing....148
Nozzles....146
Pumps, Deep Well....194

M

Page

McDonald Pumps, Force.....195, 196
Pumps, Pitcher.....196
Pumps, Shallow Well.....194, 195
Stops, Compression.....512
Stops, Gas Service.....144
Stops, Steam, Brass.....143
Stops and Drains.....512
Switches, Pressure, Water System.....195
Valves, Foot.....201
Valves, Gate, Lock.....147
Valves, Line, Loading.....147
Valves, Throttle.....147
McDonnell Cut-Offs, Low-Water...356
Feeders, Safety.....356
Feeders and Cut-Offs, Boiler Water, Combined.....356
Feeders and Cut-Offs, Safety, Combined.....356
Switches, Cut-Off, Low-Water....356
Measures and Weights.....556
Measuring Belts, Rules for.....554
Mechanical Oil Pumps, Manzel....184
Mechanics' Tool Kits.....308
Medicine Cabinets.....480–482
Melting Furnaces, Lead.....290
Furnaces and Heaters, Combined, Hauck.....290
Ladles.....290
Pots.....290
Menders, Hose, Sherman.....233
Mercury Columns and Proving Pumps, Gas Fitters'.....297
Merion Heaters, Water, Gas.....499
Metal—
Anti-Friction.....508
Babbitt.....508
Bearing.....508
Magnolia.....508
Metal Gaskets, Akron..... 49
Hose, Flexible.....229–232
Information.....555
Snips, Pexto.....283
Metallic Sheet Packing, Asbestos...217
Meter Manifolds, Condensation, Adsco.....545
Pump Nozzles, McDonald.....146
Rings.....546
Yokes, Mueller.....543
Meters—
Condensation, Adsco.....545
Gasoline.....545
Hot Water.....544
Oil.....545
Water.....543, 544
Metric Equivalents.....556
Metropolitan Injectors.....178
Miami Cabinets, Towel Supply and Utility.....476
Mill Hose.....228
Millboard, Asbestos.....206
Miller Syphons, Sewage.....535
Millers Falls Braces, Bit.....306
Frames, Hack Saw.....280
Handles, Auger.....306
Levels.....305
Plumbs and Levels.....305
Screwdrivers.....306
Mineral Wool.....208
Minneapolis-Honeywell
Acratherms.....352
Airstats.....354
Aquastats.....353, 354
Chronotherms.....351, 352
Controllers, Furnace, Combination.....354

M

Page

Minneapolis-Honeywell
Controllers, Humidity.....352
Controllers, Pressure.....353, 354
Controls.....351–355
Cut-Offs, Low-Water.....356
Furnacestats.....354
Motors, Induction, Damper.....355
Pressuretrols.....353
Regulators.....351–355
Thermostats.....351, 353
Valves, Gas.....355
Mirror Cabinets.....476, 480–482
Mirrors—
Bathroom, Hall-Mack.....482
Wall, Hall-Mack.....482
Miscellaneous Information.....555
Misener Saws, Hack, Rotary.....280
Mixers, Water.....456–459
Mixing Valve Fittings, Knee Control.....369
Valves.....456–459
Modern Adjusters, Hanger..... 99
Brackets, Radiator.....338
Hangers, Pipe..... 99
Inserts, Concrete.....100
Rollers, Pipe.....101
Modine Heaters.....322
Mohawk Air Conditioners.....317
Molasses Gates.....146
Mol-Tex Plastic Closet Seats, Molded.....435–437
Monel Sinks, Kitchen.....413, 415
Monitor Pipe Holders.....200
Monkey Wrenches.....274
Monobloc Centrifugal Pumps, Worthington.....192
Monoflo Fittings, Cast Iron, B & G.....339
Heating Systems, Hot Water.....339
Mortar—
Bonding.....212
High Temperature.....212
Motorized Valves, B & G.....340
Valves, Minneapolis-Honeywell...355
Motors—
Damper, Sunbeam.....351
Induction, Damper, Minneapolis-Honeywell.....355
Moulds—
Ingot Lead.....509
Solder, Bar.....509
Mueller Caulking Irons.....300
Chisels.....300
Faucets, Filglas.....470
Faucets, Laboratory.....511
Hammers, Caulking.....300
Keys, Service Box.....546
Lids, Repair, Service Box.....543
Nipples, Laboratory.....511
Reamers, Pipe End.....270
Stops, Laboratory.....511
Tapping Machines.....543
Valves, Reducing and Regulating.152
Yokes, Meter.....543
Muirkirk Reds.....212
Multicoil Spring Augers.....294
Mushroom Parabal Tank Balls....492
Mushroom Type Vents.....148

N

N-M-D Valves, Brass, Lunkenheimer.124B, 124D, 124G, 125, 128

N

Page

Nail Hammers, Pexto.....304
National System of Conditioned Air Heating.....320
Naval Valves, Flush.....482
Navy Pumps, Bilge.....203
Trough Seats.....436
Neck Flanges, Welding, Tube-Turn. 76
Flanges, Welding, Vogt..... 63
Needle Valves, Brass, Jenkins.....110
Valves, Brass, Lunkenheimer.....124H, 127
Valves, Steel, Lunkenheimer....124H
Nesco Cans, Gasoline.....188
Neverleak, Boiler.....255
Niagara Meters.....544, 545
Strainers, Trap.....545
Nibco Cocks, Ball.....489
Valves.....489
Nipples—
Brass, Laboratory.....511
Brass, Standard..... 98
Butt..... 97
Hose, Air Gun, Jenkins.....124
Hose, Brass.....232, 234
Hose, Fire.....239
Hose, King.....234
Hose, Lunkenheimer.....124G
Hose, Sherman.....234
Hose, Steel.....234
Laboratory, Mueller.....511
Malleable Iron..... 52
Pipe.....96–98
Radiator.....339
Soldering.....510
Stainless Steel..... 68
Tank..... 97
Trap, Brass.....498
Welding, Tube-Turn..... 73
Wrought.....75, 97
Noera Oilers.....187, 188
Nokorode Soldering Fluid.....509
Soldering Paste.....509
Non-Conductors, Relative Value..552
Non-Metallic Valve Discs, Lunkenheimer.....126
Non-Return Valves, Lunkenheimer.....124E, 133, 134
Nozzles—
Air, Jenkins.....124
Air, Lunkenheimer.....124G, 125
Hose.....236
Hose, McDonald.....146
Meter Pump, McDonald.....146
Spray.....236
Nutmeg Pumps, Bilge.....203
Nuts—
Brass, Compression, Imperial..... 92
Brass, S.A.E., Imperial..... 93
Cast Brass, Slip Joint.....497
Closet Bolt.....493
Closet Screw.....493
Faucet, Brass.....494
Lock, Brass, Standard.....83, 84
Lock, Cast Iron, Standard.....20, 25
Lock, Cast Iron, Weights of.....547
Lock, Malleable Iron, Standard.50–52
Lock, Stainless Steel..... 68
Sleeve, Copper, Flared, Chase.... 91
Slip Joint.....497
Stem, Quaturn.....493
Union, Brass, S.A.E., Imperial.... 93
Waste, Malleable Iron, Standard.....50, 51
Nu-Way Oilers, Pump.....187
Nye Wrenches.....274

O

Page

O-B Valves, Angle, Brass.....135
Valves, Check, Brass.....135, 136
Valves, Gate, Brass.....136
Valves, Globe, Brass.....135
O.D. Pipe, Large..... 2
Oakmont Boilers.....325
Heating Units, Oil.....326
Oakum.....220
Oberdorfer Pumps, Geared.....191
Observers, Pipe Line.....148
Offset Connections, Formula for....552
Couplings, Ball.....462
Offsets—
Cast Iron, Soil Pipe.....527
Malleable Iron, Standard.....50–52
Vitrified, Sewer Pipe.....537
Oil—
Cutting.....251
Lard.....251
Penetrating.....251
Threading.....251
Oil Bibbs.....146
Clarifiers, Briggs.....183
Controls, Constant Level, Lunkenheimer.....124H, 185
Cup Glasses, Lunkenheimer.....186
Cup Washers, Lunkenheimer.....186
Cups, Gits.....186, 187
Cups, Lunkenheimer..124H, 185, 186
Faucets.....146
Gate Valves.....147
Gates.....146
Gauges.....149
Hole Covers, Gits.....186
Meters.....545
Pumps, Hand, Lunkenheimer....185
Pumps, Mechanical, Manzel.....184
Separators, Wright-Austin.....156
Storage Tanks.....150
Tank Fill Boxes.....148
Tank Fill Caps.....148
Tank Valves.....147
Oilers—
Bottle, Lunkenheimer.....124H, 185
Noera.....187, 188
Pump.....187
Railroad.....187
Roll Thread, Noera.....187
Trigger.....188
Oily Waste Cans.....188
Ornaments—
Ball, Brass, Railing..... 58
Ball, Malleable Iron, Railing..... 57
Oster Sewer Master.....292
Oswego Expanders, Tube.....284
Outfits—
Air Compressor, Worthington....205
Brazing, Prest-O-Lite.....287, 288
Contractors', Rawlplug.....106
Five-In-One, Prest-O-Lite.....288
Four-in-One, Prest-O-Lite.....287
Plumbers', Prest-O-Lite.....287
Reseating, Valve.....302, 303
Soldering, Prest-O-Lite.....287, 288
Welding, Prest-O-Weld.....287
Outlet Connections, Swimming Pool, Josam.....518
Overflow Connections, Swimming Pool, Josam.....518
Tube Guide Holders.....491
Tubes, Flush Valve, Closet Tank.490
Overflows, Standing, Duriron.....521
Overflows and Drains—
Bath.....462
Sink.....465
Oxweld Goggles.....288
Lighters, Friction.....287

O

Page

Oxweld Rods, Welding.....288
Oxygen Hose.....225

P

P Trap Standards, Service Sink.....422
Traps, Acid-Proof, Drain Pipe, Duriron.....520
Traps, Bent Tube.....497, 498
Traps, Brass.....497, 498
Traps, Cast Iron, Closet.....529
Traps, Cast Iron, Drainage....31, 32
Traps, Cast Iron, Soil Pipe.....529
Traps, Cast Iron, Threaded..498, 499
Traps, Lead.....498
Traps, Vitrified, Sewer Pipe.....537
P.O. Plugs.....473
Packing—
Braided.....218, 219
Coil.....217–220
Flax.....217, 219
Hemp.....220
Hot Oil.....218, 219
Hydraulic.....217, 219
Jute.....219, 220
Low Pressure.....218
Piston.....217–219
Plastic.....219
Plunger.....217–219
Pump.....217–219
Ring.....217–219
Rod.....217–219
Rope, Asbestos.....219
Sheet.....217, 218
Spiral.....217–219
Steam.....218
Tucks.....219
Valve Stem.....218
Twisted.....218–220
Wick, Asbestos.....219
Wick, Candle.....219
Packing Rings.....222
Tools, Baltimore.....299
Tools, Pilley.....302
Washers, Quaturn.....493
Packings, Leather.....221, 222
Pails—
Cement, Galvanized.....188
Contractors', Galvanized.....188
Fire, Galvanized.....188
Water, Galvanized.....189
Paint—
Bondlite.....254
Paste.....254
Rust Preventive.....254
Paint Spray Hose.....226
Palmer Traps, Sewer Gas and Back Water.....532
Valves.....532
Panels, Access, Lawco.....476
Pantry Faucets, Compression..469, 470
Paper, Asbestos.....208
Paper Towel Cabinets.....476
Para Shower Curtains.....460
Parabal Tank Balls.....492
Parker Bathroom Accessories.....477
Parmelee Wrenches, Pipe, Walworth.....273
Parral Mortar, Bonding, Plastic....212
Partitions, Urinal and Closet Stall.474
Parts—
Air Nozzle, Lunkenheimer.....125
Blow Torch, C & L.....291
Boiler.....331
Closet, Vogel.....431
Die Stock.....257
Ejector, Penberthy.....179

P

Page

Parts—
Fire Pot, C & L.....291
Flaring Tool, Imperial..... 94
Hose Coupling, Boss.....232
Injector, Metropolitan.....178
Injector, Penberthy.....178
Injector, U.S.....176
Inspirator, Hancock.....177
Jack, Hydraulic, Watson-Stillman 314
Pipe Cutter.....267–269
Pipe Machine, Toledo.....263
Quick Compression, Quaturn.....493
Roadway Box.....542
Service Box.....542, 543
Steam Trap, Armstrong.....160
Valve, Blow-Off, Everlasting.....140
Valve, Brass, Jenkins.....108, 112
Valve, Flush.....484–486, 488
Valve, N-M-D, Brass, Lunkenheimer.....125
Valve, Rapid Action, Jenkins....112
Valve, Reducing, Mason.....152
Valve Box, Extension.....542
Wrench, Adjustable.....275
Wrench, Monkey.....274
Wrench, Pipe.....272, 273
Parts and Supplies Bins, Lyon.....308
Paste—
Cold Water.....206
Graphite.....252
Soldering.....509
Paste Paint.....254
Pavement Joints.....215, 216
Paving Bricks.....212
Pax Skin Cleanser.....475
Soap Dispensers.....475
Pedestals, Radiator.....339
Peerless Radiators.....334, 335
Penberthy Adapters, Faucet.....494
Covers, Sump.....190
Drainers, Cellar.....190
Ejectors.....179
Heaters, Water.....180
Injectors.....178
Pumps, Sump.....189
Valves, Control, Pressure and Relief.....342
Penetrating Oil.....251
Penn Posts, Pipe Vise and Bender..279
Perforated Hanger Strapping.....100
Petro Unions, Forged Steel..... 80
Pexto Hammers.....304
Handles, Soldering Copper.....297
Pliers.....283
Screwdrivers.....305
Snips.....283
Phillips Screwdrivers, Millers Falls.306
Shells, Expansion.....105
Valves, Seal, Trap.....519
Picking Chisels, Baltimore.....298
Picks—
Clay.....284
Railroad.....284
Pieces—
Extension, Brass, Screwed, Standard.....83, 84
Extension, Cast Iron, Soil Pipe...528
Extension, Malleable Iron, Screwed, Standard.....50, 51
Pig Lead.....508
Tails.....169
Pilley Packing Tools.....302
Scraping Tools.....302
Pilot Burners, Coal, Automatic.....320
Pins—
Belt, Alligator.....244

P Page

Pins—
Belt, Clipper....243
Bending....297, 299
Curtain, Shower....459
Cutter, Pipe....268, 269
Towel....479
Turn....297

Pipe—
Bell and Spigot, Cast Iron.... 12
Brass, Seamless.... 82
Cast Iron, Bell and Spigot.... 12
Cast Iron, Flanged.... 12
Cast Iron, Soil....522
Cast Iron, Threaded.... 10
Channel, Vitrified Clay....538
Conductor, Wheeling....506
Copper, Seamless.... 82
Culvert, Corrugated.... 10
Double Extra Strong, Byers.... 5
Double Extra Strong, Youngstown.... 1
Drain, Acid-Proof, Duriron....520
Extra Strong, Byers.... 5
Extra Strong, Youngstown.... 1
Flanged, Cast Iron.... 12
Flue....505
Furnace....321
Genuine Wrought Iron, Byers....4, 5
Large O.D.... 2
Lead....507
Line, Youngstown....2, 3
Pit Cast, Cast Iron.... 12
Plain End, Youngstown.... 3
Reamed and Drifted, Youngstown 2
Sewage Filter, Vitrified Clay....538
Sewer, Vitrified Clay....535
Soil, Cast Iron....522
Spiral, Taylor Forge.... 9
Stainless Steel.... 11
Standard, Byers.... 5
Standard, Youngstown.... 1
Steel....2, 6–9, 11
Stove, Fire Clay....215
Tin, Block....506
Water, Cast Iron, Bell and Spigot. 12
Wrought....1–5
Youngstown....1–3

Pipe Augers Drain....294
Bands, Soil....528
Benders, Skinner....279, 280
Benders, Tal's....279
Benders and Vise Stands, Martin.278
Bending Springs....297
Bends.... 7
Bundling Table.... 1
Clamps....542
Clamps, Dresser.... 95
Clamps, Grinnell....100
Clamps, Jewel.... 79
Clamps, Riser....101
Clamps, Skinner-Seal....95, 96
Cleaner, Drain....256
Cleaner, Sewer....256
Cleaners, Top-Snake, Marco....295
Cleaners, Sewer....292–296
Cleaners, Waste....293–295
Columns.... 8
Couplings, A.P.I.... 18
Couplings, Dresser....14–16
Couplings, Extra Heavy.... 18
Couplings, Standard.... 18
Covering, Magnesia....207
Covering, Protective.... 6
Covering, Sectional....207
Covering Bands....207
Covering Protection Saddles, F & M....102
Cutter Pins....268, 269
Cutter Rollers....268, 269
Cutter Wheels....268, 269
Cutters, Beaver....268

Pipe Cutters, J.R.S....269
Cutters, Reed....268
Cutters, Ridgid....269
Cutters, Toledo....267
Cutters, Trimo....269
Cutting.... 7
Cutting Chisels, Mueller....300
Dope Brushes....254
End Reamers, Mueller....270
Extractors, Ridgid....271
Fitting.... 7
Fittings, Brass, Flanged, Extra Heavy.... 85
Fittings, Brass, Flanged, Standard.... 85
Fittings, Brass, Screwed, Extra Heavy.... 85
Fittings, Brass, Screwed, Standard....83, 84
Fittings, Cast Iron, Flanged, Extra Heavy....41–48
Fittings, Cast Iron, Flanged, Standard....33–40
Fittings, Cast Iron, Long Sweep.. 22
Fittings, Cast Iron, Screwed, Extra Heavy....25, 26
Fittings Cast Iron, Screwed, Standard....19–21, 23–26
Fittings, Cast Iron, Screwed, Weights of....547
Fittings, Cast Iron, Water Main.. 13
Fittings, Cast Steel, Flanged...65–67
Fittings, Drain, Acid-Proof, Duriron....520
Fittings, Flue....505
Fittings, Forged Steel, Flanged, Vogt....61–63
Fittings, Forged Steel, Screwed, Vogt....59–61
Fittings, Malleable Iron, A.A.R., Walworth.... 53
Fittings, Malleable Iron, Compression, Dresser.... 14
Fittings, Malleable Iron, Hydraulic, Walworth.... 53
Fittings, Malleable Iron, Screwed, Heavy.... 55
Fittings, Malleable Iron, Screwed, Standard....50–52
Fittings, Malleable Iron, Screwed, 300-Pound....54, 55
Fittings, Malleable Iron, Weights of.... 52
Fittings, Sewer, Vitrified Clay....536, 537
Fittings, Soil, Cast Iron....522–531
Fittings, Stainless Steel, Flanged.. 68
Fittings, Stainless Steel, Screwed.. 68
Fittings, Steel, Flanged, Lightweight Pipe.... 9
Fittings, Stove, Fire Clay....215
Gaskets, Dresser.... 17
Hanger Adjusters.... 99
Hanger Clamps....100, 101
Hanger Iron.... 99
Hanger Sockets.... 99
Hanger Steel....100
Hangers, Blake.... 98
Hangers, F & M....98, 99
Hangers, Modern.... 99
Headers, Wrought Steel.... 7
Heads, Exhaust, Swartwout....157
Holders, Flush, Closet....490
Holders, Monitor....200
Holders, Supply, Closet....490
Hooks, Soil....529
Hooks, Steel Wire....101
Information....547, 549–551
Joint Cement....252
Joint Clamps.... 95
Joint Compound....251–253
Joints, Kafer....531

Pipe Joints, Sisson....530
Line Clamps....95, 96
Line Sight Glasses....148
Line Strainers....163, 164
Line Swing Joints, McDonald....148
Machines, Toledo....261–263
Machines, Williams....266
Markers, Jewel.... 79
Nipples....96–98
Protection, Steel.... 6
Pushers, Hydraulic, Greenlee....280
Racks, Lyon....309
Railings.... 55
Reamers, Beaver....270
Reamers, GTD....269, 270
Reamers, Reed....270
Reamers, Toledo....270
Rests, Soil....529
Roll Stands, Grinnell....100, 101
Rollers, Modern....101
Rolls and Plates, Grinnell...100, 101
Saddle Hubs, Connolly....530
Saddle Hubs, Soil....530
Saddles, Grinnell....101
Saddles, Skinner-Seal.... 96
Saddles, Soil....530
Savers.... 7
Sleeve Gaskets, Dresser.... 17
Sleeves, Dresser.... 17
Solvent, Drain....256
Stocks and Dies, Beaver....264–266
Stocks and Dies, Beaverette....265
Stocks and Dies, Reed....257, 258
Stocks and Dies, Ridgid....259
Stocks and Dies, Toledo....259–262
Strainers, Suction..164, 180, 200, 201
Straps....99, 100
Soil....529
Supports, Grinnell....101
Taps, GTD....271
Taps and Drills, GTD....271
Threading.... 7
Tongs, Williams....271, 272
Vise and Bender Posts....279
Vise Stands....277–279
Vises, Combination, Reed....276
Vises, Reed....276, 277
Vises, Ridgid....277
Vises, Toledo....277
Vises, Williams....277
Wrenches, Parmelee, Walworth...273
Wrenches, Ridgid....272
Wrenches, Stillson, Walworth....273
Wrenches, Trimo-Alloy....273
Wrenches, Walco....273
Wrenches, Warnock....273
Wrenches, Williams....271, 272

Pipe and Bolt Machines, Beaver....266, 267

Pipes—
Bursting Pressures of.... 8
Flush, Closet....491
Friction of Water in....548
Play....236
Steam, Linear Expansion of....551
Supply, Bath....462
Supply, Closet....491
Supply, Lavatory....471, 472
Supply, Lavatory, Hospital....370

Piston Packing....217–219
Units, Flush Valve....486, 488

Pit Cast Pipe, Cast Iron.... 12

Pitcher Pumps....196

Plain Faucets, Compression...468, 469
Faucets, Ground Key....469
Faucets, Self-Closing....469

Plans—
Bathroom....371
Installation, Septic System, San-Equip....533

P Page

Plastic Bonding Mortar....212
Cement, Stove and Furnace....253
Closet Seats....435–437
Compound, Asphalt....253
Fire Brick....211
Packing....219
Roof Cement....254

Plates—
Belt, Crescent....243
Floor and Ceiling, Combination....364
Hook, Cast Iron....101
Wall, Malleable Iron, Standard.50, 51

Plates and Rolls, Pipe, Grinnell 100, 101

Play Pipes....236

Plibrico Refractory Products....209

Plicast Castable Material....209

Pliers—
Combination....283
Expanding, Lead Pipe....297
Pexto....283

Plug Valves, Lubricated, Walworth 142, 143

Plugs—
Bar, Cast Iron.... 21
Brass, Screwed, Standard....83, 84
Bull.... 74
Cast Bronze, Solder, Chase.... 89
Cast Iron....21, 25
Cast Iron, Screwed, Weights of....547
Cast Iron, Soil Pipe....528
Cast Iron, Water Main.... 13
Copper, Flared, Chase.... 91
Drain, Laundry Tray....465
Drain, Lavatory....473
Drain, Sink....465
Drift....297
Forged Steel, Screwed, Vogt.... 60
Fusible, Sherman....169
Lavatory....473
Malleable Iron.... 21
P.O....473
Radiator.... 21
Repair, Boiler....292
Stainless Steel, Screwed.... 68
Steel....21, 25
Test, Climax....296
Wash Tray....465

Plugs and Strainers, Sink....466

Plumbers' Auger Bits, Greenlee....306
Augers....294, 295
Brushes....286
Candles....256
Chain....473, 474
Lead Working Tools....297
Oakum....220
Outfits, Prest-O-Lite....287
Pumps, Force and Suction....297
Putty....256
Rods, Sewer....292–296

Plumbers' Friend....296

Plumbs and Levels....305

Plunger Conduit Tools....296
Leathers....222
Packing....217–219
Pumps, Triplex, Deming....193

Plungers—
Plumbers'....296
Pump, Boat....203

Pneumatic Chisels, Baltimore....300
Hose....225
Hose Nipples....234
Pressure Tanks....204, 205

Points—
Bull, Baltimore....301
Drill, Masonry, Carboloy....302
Well, Clayton Mark....198

P Page

Pokers, Engineers'....286

Pools, Drain, San-Equip....534

Pop Safety Valves, Lonergan..157, 158
Safety Valves, Lunkenheimer...124G
Valves, Lunkenheimer....124G

Pop-Up Drains, Foot Control....370
Drains, Knee Control....370
Drains, Lavatory....467
Drains, Lavatory, Hospital....370
Drains and Overflows, Bath....462

Porcelain Glaze, Tilette....253

Portable Bilge Pumps....203
Pipe Benders....279
Spray Heads, Sherman....237
Tool Stands, Lyon....309

Post Vises, Ridgid....277

Posts—
Indicator, Valve, Kennedy....539
Vise and Bender, Pipe....279

Pots—
Chimney....214
Fire, C & L....290, 291
Fire, Insto-Gas....289
Melting....290
Solder....290

Pouring Ladles....290

Powder—
Adhesive, Glossgard....256
Bronze, Radiator....254

Power Boilers, Lookout....330
Boxes, Zone Control, Sunbeam....351
Drives, Beaver....266
Drives, Toledo....263

Prepared Joints, Bell-and-Spigot.... 12

Preserver Belt....245

Preservers and Washers, Gauge Glass....169

Pressure Controllers, Minneapolis-Honeywell....353, 354
Gauge Testers, Ashcroft....170
Gauges....171–173, 176
Reducing Valves, Klipfel....151
Reducing Valves, Mason....152, 153
Reducing Valves, Masoneilan 153, 154
Reducing Valves, MasoNeilan....154
Reducing Valves, Mueller....152
Reducing Valves, Thrush....341
Reducing Valves, Watts....344
Regulating Valves, Klipfel....151
Regulating Valves, Mason....152, 153
Regulating Valves, Masoneilan 153, 154
Regulating Valves, MasoNeilan....154
Regulating Valves, Mueller....152
Regulating Valves, Thrush....341
Regulating Valves, Watts....344
Regulators, Klipfel....151
Regulators, Mason....152, 153
Regulators, Masoneilan....153, 154
Regulators, MasoNeilan....154
Regulators, Mueller....152
Regulators, Thrush....341
Regulators, Watts....344
Regulators and Strainers, Watts..344
Relief Valves, B & G....340
Relief Valves, Klixon....345, 346
Relief Valves, Thrush....340–342
Relief Valves, Watts....344, 345
Relief and Boiler Drain Valves, Combined, Kitco....346
Snubbers, Ray....173
Switches, Water System, McDonald....195
Tanks, B & G....340
Tanks, Pneumatic....204, 205
Tanks, Thrush....340

Pressure, Temperature and Vacuum Valves, Watts....345

P Page

Pressure and Relief Control Valves, Penberthy....342

Pressure and Temperature Relief Valves, Klixon....346
Relief Valves, Thrush....340
Relief Valves, Watts....345

Pressures of Pipes, Bursting.... 8

Pressuretrols, Minneapolis-Honeywell....353

Prestal Hydraulic Pipe Benders....279

Pres-Tem-Vac Valves, Watts....345

Prest-O-Lite Five-In-One Outfits..288
Four-in-One Outfits....287
Plumbers' Outfits....287
Tanks, Gas....288

Prest-O-Weld Welding Outfits....287

Preventers, Back Syphon, Si-Flo....486

Primer, Radiator....254

Priming Cups....185

Prismatic Water Gauges....166

Producer Belting....241

Promenade Deck Drains, Josam....515

Protection, Pipe, Steel.... 6

Protection Saddles, Pipe Covering, F & M....102

Protectorelays, Sunbeam....351

Proving Pumps and Mercury Columns, Gas Fitters'....297

Proving Pumps and Testing Gauges, Gas Fitters'....297

Pullers—
Hand Gauge, Lonergan....169
Root, Sewer Cleaning....293

Pulleys, U Belt, Gates....247–250

Pulleys and V Belts, Gates....246

Pulls, Closet....490

Pump Covers, Sump, Penberthy....190
Cylinders, Clayton Mark....197, 198
Cylinders, Deming....197
Diaphragms....222
Governors, Fisher....155
Leathers....221, 222
Nozzles, Meter, McDonald....146
Oilers....187
Packing....217–219
Plungers, Boat....203
Rod Couplings, Steel....200
Rod Couplings, Wood....198
Rod Die Heads, Toledo....260
Rods, Wood....198
Swing Joints, McDonald....148
Valves, Boat....203
Valves, Jenkins....223

Pumping Systems Water, Shallow Well....194
Units, Centrifugal, Deming....191

Pumps—
Bilge....203
Boat....203
Boiler Feed, American-Marsh....190
Centrifugal, Deming....191, 193
Centrifugal, Worthington....192
Condensation, Hoffman-Economy 348, 349
Deep Well, McDonald....194
Force, Double-Acting....195
Force, Gas Main....297
Force, House....195
Force, Set-Length....196
Force and Suction, Plumbers'....297
Geared, Oberdorfer....191
Hand, Watson-Stillman....170
Jet, Blakeslee....179
Jet, Deming....193
Oil, Hand, Lunkenheimer....185

P

Page

Pumps—
Oil, Mechanical, Manzel.....184
Pitcher.....196
Plunger, Triplex, Deming.....193
Rotary.....191
Sand, Clayton Mark.....200
Set-Length.....196
Shallow Well.....194, 195
Steam, American-Marsh.....190
Suction, Diaphragm, Goulds.....191
Sump, Penberthy.....189
Syphon, Watson & McDaniel.....179
Test, Hydraulic.....170
Transfer, Rotary, Roper.....191
Unloader, Oberdorfer.....191
Water System.....194, 195

Pumps and Drills, Sand, Clayton Mark.....200

Pumps and Mercury Columns, Proving, Gas Fitters'.....297

Pumps and Testing Gauges, Proving, Gas Fitters'.....297

Punches, Bull Point, Baltimore....301

Purgers, Refrigerant Gas, Armstrong.....163

Pushers, Pipe, Hydraulic, Greenlee.280

Putty, Plumbers'.....256

Pyrex Gauge Glasses.....168

Q

Quaturn Repair Parts, Quick Compression.....493

Quick Drains, Waterid.....519
Vents.....362, 363

Quick-Hook-Up Safety Feeders, McDonnell.....356

Quick-Operating Valves, All-Iron, Lunkenheimer.....124F
Valves, Brass, Jenkins..108, 112, 124
Valves, Brass, Lonergan.....141
Valves, Brass, Lunkenheimer 124D, 124G, 129
Valves, Iron Body, Jenkins.....119
Valves, Iron Body, Lunkenheimer 124D, 131

Quiet-Flush Equipment, Sloan 482, 483

R

Racks—
Bar, Lyon.....309
Hose.....237, 239
Towel.....477–480

Radiant Heaters, Lawson.....338

Radiatherms, Arco.....357

Radiator Air Valves.....362–364
Balancing Fittings, DL.....359
Brackets.....338, 339
Bronze Powder.....254
Bronzing Brushes.....254
Bushings, Cast Iron, Standard.... 21
Controls, Arco.....357
Covers, Arco.....338
Elbows, Union, DL.....359
Enclosures, Arco.....338
Feet.....339
Filling Faucets, McDonald.....145
Nipples.....339
Pedestals.....339
Plugs..... 21
Primer.....254
Traps, Hoffman.....360
Traps, Sarco.....361
Vacuum Valves.....362–364
Valve Adapters, Hoffman.....362
Valve Cleaner.....255

R

Page

Radiator Valve Handles.....142
Valves, Arco.....358, 363
Valves, Arco-Detroit.....363
Valves, Compression.....364
Valves, DL.....357–359
Valves, Hoffman.....362
Valves, Ideal.....358, 363
Valves, Jenkins.....357
Valves, Scovill.....363
Valves, Vent-Rite.....363, 364
Wrenches.....274, 299

Radiators—
American.....335
Arco.....334
Corto.....332, 333
Peerless.....334, 335
Sunrad.....336

Rags, Wiping.....220

Railing Fittings, Brass..... 58
Fittings, Malleable Iron.....56–58

Railings, Pipe..... 55

Railroad Elbows, Malleable Iron, Union..... 81
Oilers.....187
Picks.....284
Tees, Malleable Iron, Union..... 81

Rails, Grab.....479

Rails and Soap Holders, Grab, Combined.....478, 479

Rams, Rife.....202

Range Boiler Fittings, Brass..... 81
Boiler Fittings, Cast Bronze, Chase..... 90
Boiler Fittings, Copper, Flared, Chase..... 91
Boiler Spuds, Brass..... 81
Boiler Stands.....502
Boilers.....501, 502
Oil Storage Tanks.....150

Rapid Action Valves, Brass, Jenkins.....112

Ratchet Bit Braces, Millers Falls...306
Boring Tools, Toledo.....307
Jacks, Duff-Norton.....314, 315
Pipe Cutters.....267, 268
Reamers.....270
Stocks and Dies, Bolt, Beaver....264
Stocks and Dies, Pipe, Beaver 264, 265
Stocks and Dies, Pipe, Beaverette.265
Stocks and Dies, Pipe, Reed.....257
Stocks and Dies, Pipe, Ridgid....259
Stocks and Dies, Pipe, Toledo 260–262
Stocks and Dies, Tubing, Toledo..261

Rawl Anchors.....105

Rawl-Anchor Anchors.....105
Caulking Tools.....105

Rawldrills.....107

Rawl-Drive Bolts, Expansion.....105

Rawl-Grips, Drill Holder.....107

Rawlplug Anchors.....106
Contractors' Outfits.....106

Rawls Caulking Tools.....107

Rawl-Tapers.....107

Ray Pressure Snubbers.....173

Reamed and Drifted Pipe, Youngstown..... 2

Reamers—
Burring.....269, 270
Pipe, Beaver.....270
Pipe, GTD.....269, 270
Pipe, Reed.....270
Pipe, Toledo.....270
Pipe End, Mueller.....270
Ratchet.....270

R

Page

Receivers—
Air, Arrow.....204
Blow-Off.....155

Receptacles, Waste.....189

Receptors, Shower.....453

Recording Pressure Gauges, Masoneilan.....176
Thermometers, Masoneilan.....176

Record Maker Belting.....241

Reducer Couplings, Pump Rod....200
Couplings, Swivel, McDonald....146
Couplings, Tank Car, McDonald..146

Reducers—
Acid-Proof, Drain Pipe, Duriron..520
Brass, Screwed, Standard.....83, 84
Cast Bronze, Solder, Chase..... 89
Cast Iron, Flanged, Extra Heavy 47, 48
Cast Iron, Flanged, Standard..39, 40
Cast Iron, Screwed, Standard..20, 26
Cast Iron, Screwed, Weights of...547
Cast Iron, Soil Pipe.....528
Cast Iron, Water Main..... 13
Cast Steel, Flanged.....65–67
Copper, Flared, Chase..... 90
Eccentric, Cast Iron, Flanged, Extra Heavy.....47, 48
Eccentric, Cast Iron, Flanged, Standard.....39, 40
Eccentric, Cast Steel, Flanged..65–67
Hose, Brass.....232
Malleable Iron, Screwed, Standard.....50–52
Spud, Closet.....491
Stainless Steel, Flanged..... 68
Steel, Flanged, Lightweight Pipe.. 9
Vitrified, Sewer Pipe.....537
Welding, Tube-Turn..... 73
Welding, Watson-Stillman..... 69
Wrought Copper, Solder, Chase 89, 90

Reducing Fittings, Acid-Proof, Drain Pipe, Duriron.....520
Fittings, Brass, Screwed, Extra Heavy..... 85
Fittings, Brass, Screwed. Standard 83, 84
Fittings, Cast Brass Casing..496, 497
Fittings, Cast Bronze, Solder, Chase..... 89
Fittings, Cast Iron, Drainage...28–30
Fittings, Cast Iron, Flanged, Extra Heavy.....41–48
Fittings, Cast Iron, Flanged, Standard.....33–40
Fittings, Cast Iron, Long Sweep.. 22
Fittings, Cast Iron, Screwed, Extra Heavy..... 26
Fittings, Cast Iron, Screwed, Standard.....19, 20, 23–25
Fittings, Cast Iron, Screwed, Weights of.....547
Fittings, Cast Iron, Soil Pipe.....522–525, 528
Fittings, Cast Iron, Sprinkler..... 22
Fittings, Cast Iron, Water Main.. 13
Fittings, Cast Steel, Flanged...65–67
Fittings, Copper, Flared, Chase.90, 91
Fittings, Forged Steel, Flanged, Vogt.....61, 62
Fittings, Malleable Iron, A.A.R., Walworth..... 53
Fittings, Malleable Iron, Hydraulic, Walworth..... 53
Fittings, Malleable Iron, Screwed, Heavy..... 55
Fittings, Malleable Iron, Screwed, Standard.....50–52
Fittings, Malleable Iron, Screwed, 300-Pound.....54, 55

R

Page

Reducing Fittings, Malleable Iron, Weights of ... 52
Fittings, Stainless Steel, Flanged .. 68
Fittings, Stainless Steel, Screwed ... 68
Fittings, Steel, Flanged, Lightweight Pipe ... 9
Fittings, Welding, Bonney ... 70
Fittings, Welding, Tube-Turn ... 72, 73, 75, 78
Fittings, Welding, Watson-Stillman ... 69
Fittings, Wrought Copper, Solder, Chase ... 86, 89, 90
Flanges, Cast Iron, Extra Heavy .. 48
Flanges, Cast Iron, Standard ... 40
Flanges, Forged Steel, Tube-Turn. 78
Nipples, Wrought ... 75
Valves, Pressure, Klipfel ... 151
Valves, Pressure, Mason ... 152, 153
Valves, Pressure, Masoneilan. 153, 154
Valves, Pressure, MasoNeilan ... 154
Valves, Pressure, Mueller ... 152
Valves, Pressure, Thrush ... 341
Valves, Pressure, Watts ... 344

Reducing and Relief Valves, Combined, B & G ... 340
Valves, Combined, Thrush ... 342

Reed Caps, Vise Jaw ... 276
Cutters, Pipe ... 268
Dies, Bolt ... 257
Heads, Die, Bolt ... 257
Reamers, Ratchet ... 270
Stocks and Dies, Bolt ... 258
Stocks and Dies, Pipe ... 257, 258
Vises ... 276, 277
Wheels, Pipe Cutter ... 268

Reels, Hose ... 237

Refacers, Valve ... 302, 303

Refill Tubes Closet Tank ... 490

Refractory, Castable, Cas-To-Fit, Robinson ... 212

Refractory Cement ... 209, 212
Concrete ... 209
Products ... 209–212

Refrigerant Gas Purgers, Armstrong ... 163

Refrigerator Drains, Sani-Teed ... 519
Tubing, Seamless Copper ... 83

Register Ball Gauge Cocks ... 167

Registers, Air Conditioning, T & B. 321

Regranulated Cork ... 208

Regulating Valves, Pressure, Klipfel ... 151
Valves, Pressure, Mason ... 152, 153
Valves, Pressure, Masoneilan. 153, 154
Valves, Pressure, Masoneilan ... 154
Valves, Pressure Mueller ... 152
Valves, Pressure, Thrush ... 341
Valves, Pressure, Watts ... 344

Regulators—
Draft ... 506
Heat ... 351–355
Pressure, Klipfel ... 151
Pressure, Mason ... 152, 153
Pressure, Masoneilan ... 153, 154
Pressure, Masoneilan ... 154
Pressure, Mueller ... 152
Pressure, Thrush ... 341
Pressure, Watts ... 344
Steam Arco ... 357
Stream Drinking Fountain ... 451
Temperature ... 350–355
Water Arco ... 357

Regulators and Strainers Pressure, Watts ... 344

Relays, Sunbeam ... 351

R

Page

Reliance Cocks, Gauge ... 167
Columns, Water ... 166
Gauges, Water ... 165, 166

Relief Hose ... 224, 228
Switches, Zone Control, Sunbeam. 351
Valves, B & G ... 340
Valves, Klixon ... 345, 346
Valves, Lonergan ... 158
Valves, Lunkenheimer ... 124G
Valves, Thrush ... 340–342
Valves, Watts ... 344, 345

Relief and Boiler Drain Valves, Combined, Kitco ... 346

Relief and Pressure Control Valves, Penberthy ... 342

Relief and Reducing Valves, Combined, B & G ... 340
Valves, Combined, Thrush ... 342

Renewo Valves, Brass Lunkenheimer. 124B, 124C, 126, 127

Renton Flanges, Floor, Closet ... 492

Repair Cement, X-Pandotite ... 253
Lids, Service Box ... 543
Parts, Air Nozzle, Lunkenheimer ... 125
Parts, Blow Torch, C & L ... 291
Parts, Boiler ... 331
Parts, Closet, Vogel ... 431
Parts, Die Stock ... 257
Parts, Ejector, Penberthy ... 179
Parts, Fire Pot, C & L ... 291
Parts, Flaring Tool, Imperial ... 94
Parts, Hose Coupling, Boss ... 232
Parts, Injector, Metropolitan ... 178
Parts, Injector, Penberthy ... 178
Parts, Injector, U. S ... 176
Parts, Inspirator, Hancock ... 177
Parts, Jack, Hydraulic, Watson-Stillman ... 314
Parts Pipe Cutter ... 267–269
Parts, Pipe Machine, Toledo ... 263
Parts, Quick Compression, Quaturn ... 493
Parts, Roadway Box ... 542
Parts, Service Box ... 542, 543
Parts, Steam Trap, Armstrong ... 160
Parts, Valve, Blow-Off, Everlasting ... 140
Parts, Valve, Brass, Jenkins .. 108, 112
Parts, Valve, Flush ... 484–486, 488
Parts, Valve, N-M-D, Brass, Lunkenheimer ... 125
Parts, Valve, Rapid Action, Jenkins ... 112
Parts, Valve, Reducing, Mason ... 152
Parts, Valve Box, Extension ... 542
Parts, Wrench, Adjustable ... 275
Parts, Wrench, Monkey ... 274
Parts, Wrench, Pipe ... 272, 273
Plugs, Boiler ... 292

Reprene Belting ... 242
Hose ... 227

Republic Belting ... 240–242
Belts, Endless ... 241
Hose ... 223–227
Sleeves, Dredging ... 226

Reseaters—
Faucet ... 303
Valve ... 302, 303

Reseating Outfits, Valve ... 302, 303
Tools, Faucet ... 303
Tools, Valve ... 302, 303

Rests, Soil Pipe ... 529

Retainers, Washer, Quaturn ... 493

Retard Gauges ... 173

Return Bends, Brass, Screwed, Extra Heavy ... 85

R

Page

Return Bends, Brass, Screwed, Standard ... 83, 84
Bends, Cast Iron, Screwed, Standard ... 20, 24
Bends, Cast Iron, Screwed, Weights of ... 547
Bends, Cast Iron, Soil Pipe ... 524
Bends, Cast Steel, Flanged ... 65
Bends, Copper, Flared, Chase ... 91
Bends, Malleable Iron, Ammonia, Vogt ... 63
Bends, Malleable Iron, Screwed, Standard ... 50–52
Bends, Malleable Iron, Screwed, 300-Pound ... 54
Bends, Stainless Steel, Screwed ... 68
Bends, Welding, Tube-Turn ... 71
Bends, Wrought Copper, Solder, Chase ... 90

Return-To-Boiler Systems, Kisco-Bilt ... 349

Rex Heaters, Water ... 503

Rex-Tite Couplings, Hose ... 228, 230

Rex-Tube Couplings, Hose ... 230, 231
Fittings, Exhaust, Interlocked ... 231
Hose ... 230, 231

Rex-Weld Hose ... 229, 232

Reznor Hooks, Pipe ... 101

Rhoads Belt Dressing ... 245
Belt Preserver ... 245
Belting, Leather ... 240
Cement ... 244
Discs and Washers, Hydraulic ... 221
Packings, Leather ... 221

Richmond Drainage Fittings ... 32

Ridgid Cutters, Pipe ... 269
Cutters, Tubing ... 94
Extractors, Pipe ... 271
Stands, Vise ... 278
Stocks and Dies, Pipe ... 259
Tri-Stands, Vise ... 278
Vises, Pipe ... 277
Wrenches, Pipe ... 272

Ridgoil Oil, Thread Cutting ... 251

Rife Rams ... 202

Rim Guards, Service Sink ... 421

Rims, Sprocket, Valve Wheel, Babbitt ... 142

Ring Packing ... 217–219

Rings—
Cushion, Closet Bowl ... 492
Flange, Closet Floor ... 492
Flue, Fire Clay ... 215
Meter ... 546
Packing ... 222
Syphon ... 495
Welding, Tube-Turn ... 74

Rings and Covers, Cistern ... 546

Riser Clamps ... 101

Rival Stands, Boiler, Range ... 502

Rivet Extractors, Crescent ... 243

Roadway Boxes ... 542

Robe Hooks ... 477–480

Robinson Cas-To-Fit Refractory ... 212
Cleaners, Tube ... 285
Fire Brick ... 211
Mortar, Bonding ... 212
Pipe, Channel, Vitrified Clay ... 538
Tanks, Septic ... 534

Rock Wool ... 208
Wool Home Insulating Hose ... 226

Rockers, Barrel ... 188

Rod Couplings, Conduit ... 296
Couplings, Pump, Steel ... 200
Couplings, Pump, Wood ... 198

R

Page

Rod Couplings, Sewer 296
Die Heads, Pump, Toledo 260
Flanges, Shower Curtain 459
Hanger Expansion Shells, Phillips. 105
Holders, Sewer 294
Packing 217–219

Rods—
Closet Tank 490
Curtain, Shower 459
Fibre 206
Float, Closet Tank 490
Pump, Wood 198
Sewer 292–296
Threaded, Brass 490
Welding, Oxweld 288

Roll Stands, Pipe, Grinnell 100, 101

Roller Heads, Sewer Rod 294

Rollers—
Cutter, Pipe 268, 269
Pipe, Modern 101
Tube, Wiedeke 284

Rolls and Plates, Pipe, Grinnell. 100, 101

Roof Cement 254
Connections, Cast Iron, Drainage. 31
Drains, Josam 514, 515
Flashings 532

Roofing Tempers, Copper, Sheet ... 506

Root Cutters, Sewer Cleaning .. 293, 296
Pullers, Sewer Cleaning 293

Rope—
Manila 310
Wire 310–312

Rope Clamps, Wire 312
Clips, Wire 312
Information 310, 311
Oakum 220
Packing, Asbestos 219
Sockets, Wire Rope 312
Thimbles, Wire 312

Roper Pumps 191

Rose Cutters, Washer and Gasket 220

Rosin-Core Solder 509

Ross Cutters, Root, Sewer Cleaning 296

Rotary Condensation Meters, Adsco 545
Hack Saws, Misener 280
Pumps 191

Round Point Shovels 304

Royal Valves, Flush 483, 484

Royal Worcester Brushes 95

Rubber Belting 240–242
Matting, Corrugated 216
Tubing, Ice Plant 227
Tubing, Pure Gum 227

Rubbers—
Seat, Closet 495
Test Plug 495

Rules—
Folding, Lufkin 305
Spring Joint, Lufkin 305
Tape, Lufkin 305

Runners, Joint, Lead, Asbestos 290

Running Traps, Acid-Proof, Drain Pipe, Duriron 520
Traps, Cast Iron, Drainage 31, 32
Traps, Cast Iron, Soil Pipe .. 529, 530
Traps, Vitrified, Sewer Pipe 537

Rust Preventive Paint 254

S

S Trap Standards, Service Sink 421, 422
Traps, Acid-Proof, Drain Pipe, Duriron 520

S

Page

S Traps, Bent Tube 497
Traps, Brass 497, 498
Traps, Cast Iron, Drainage 31, 32
Traps, Cast Iron, Soil Pipe 529
Traps, Cast Iron, Threaded 499
Traps, Lead 498
Traps Vitrified, Sewer Pipe 537

S.A.E. Fittings, Brass, Imperial 93

Saaco Cesspools 519
Traps, Garage 519
Traps, Sand 516

Saddle Hubs, Connolly 530
Hubs, Sewer Pipe 537
Hubs, Soil Pipe 530

Saddles—
Pipe, Grinnell 101
Pipe, Skinner-Seal 96
Protection, Pipe Covering, F & M 102
Service, Skinner-Seal 96
Sewer Pipe, Vitrified 537
Soil Pipe 530
Welding, Tube-Turn 74

Safe Line Wire Rope Clamps 312

Safety Feeders, McDonnell 356
Feeders and Cut-Offs, Combined, McDonnell 356
Valves, Pop, Lonergan 157, 158
Valves, Pop, Lunkenheimer 124G

Salt-Glazed Vitrified Clay Sewer Pipe 535

San Solvent 256

Sand Pumps, Clayton Mark 200
Pumps and Drills, Clayton Mark. 200
Suction Hose 226
Traps, Saaco 516

San-Equip Drain Pools 534
Tanks, Septic 533
Traps, Grease 534

Sani-Flush Closet Bowl Cleaner ... 256

Sanitary Septic Tanks, Robinson ... 534

Sani-Teed Drains, Refrigerator 519
Stands, Wash Tray 417

Saratoga Air Conditioners 316

Sarco Blenders, Water 459
Eliminators, Air 361
Strainers, Pipe Line 163
Traps 361

Saunders Cutters, Pipe 268

Savers, Pipe 7

Savill Faucets 469

Saw Blades, Compass, Atkins 280
Blades, Hack, Barnes 281
Frames, Hack, Millers Falls 280

Sawing Vises, Beaver 277

Saws—
Compass, Atkins 280
Hack, Barnes 281
Hack, Rotary, Misener 280
Hole, Misener 280

Scale Drains, Josam 516

Schaefer Valves, By-Pass 154

Schaul's Plugs, Repair, Boiler 292

Schedule, Bundling, Pipe 1

Schundler Cement, Insulating 208

Scoops—
Eastern Pattern 305
Furnace, Apron Brand 305
Locomotive 305
Sewer Cleaning 296
Vulcan Brand 305

Scott Stops, Compression 511

Scovill Valves, Air 363

Scrapers—
Sewer Cleaning 296

S

Page

Scrapers—
Sidewalk 305

Scrapers and Brushes, Tube, Combined 285

Scraping Tools, Pilley 302

Screw Anchors 104, 106, 107
Bumpers 495
Combinations, Closet, Brass 493
Extractors, Ezy-Out 270
Jacks, Duff-Norton 315

Screwdrivers—
Millers Falls 306
Pexto 305
Supirwin 306

Screwed Fittings, Brass, Extra Heavy 85
Fittings, Brass, Railing 58
Fittings, Brass, Standard 83, 84
Fittings, Cast Brass, Casing .. 496, 497
Fittings, Cast Iron, Extra Heavy 25, 26
Fittings, Cast Iron, Sprinkler 22
Fittings, Cast Iron, Standard 19–21, 23–26
Fittings, Cast Iron, Weights of ... 547
Fittings, Forged Steel, Vogt 59–61
Fittings, Malleable Iron, A.A.R., Walworth 53
Fittings, Malleable Iron, Ammonia, Vogt 63
Fittings, Malleable Iron, Heavy .. 55
Fittings, Malleable Iron, Hydraulic, Walworth 53
Fittings, Malleable Iron, Railing 56–58
Fittings, Malleable Iron, Standard 50–52
Fittings, Malleable Iron, 300-Pound 54, 55
Fittings, Malleable Iron, Weights of 52
Fittings, Stainless Steel 68
Flanges, Brass 85
Flanges, Forged Steel, Tube-Turn 77, 78
Flanges, Forged Steel, Vogt 61
Flanges, Stainless Steel 68

Screws—
Faucet, Brass 494
Handle, Quatern 493
Jack, Duff-Norton 315
Lag, F & M 99
Long 81
Sewer Cleaning 293, 296
Trap, Brass 510
Wood 103

Scruin Screw Anchors 104

Scullery Sinks 414, 415

Seal—
Boiler, Liquid 255
Solder, Boiler 255

Seal Valves, Trap, Phillips 519

Sealing Compound, Joint 253

Seam Covers, Vitreous China 443

Seamless Ball Floats, Fisher 151
Brass and Copper Pipe 82
Copper Boiler Tube Ferrules 10
Copper Refrigerator Tubing 83
Steel Tubing 11

Seat Bumpers, Closet 495
Dressers, Faucet 303
Hinges, Closet 493
Rubbers, Closet 495
Washers, Quaturn 493

Seats—
Closet 435–440
Quaturn 493
Trough, Navy 436

S

Page

Sectional Gaskets....220
Pipe Covering....207
Sediment Faucets....470
Interceptors, Josam....417
Semi-Steel Fittings, Ammonia, Vogt....63
Separators—
Oil, Wright-Austin....156
Steam, Wright-Austin....156
Septic System Installation Plans, San-Equip....533
Tank Cleaner....256
Tanks, Robinson....534
Tanks, San-Equip....533
Servall Tank Balls....492
Service Box Keys, Mueller....546
Box Repair Lids....543
Boxes, New Pattern....542
Cocks, Gas....144
Pipe Fittings, Chase....513, 514
Saddles, Skinner-Seal....96
Sink Faucets, Compression....464
Sink Rim Guards....421
Sink Trap Standards....421, 422
Sinks....420, 421
Sinks, Hospital....368
Servicised Expansion Joints....216
Set-Length Pumps....196
Sets—
Pipe Extractor, Ridgid....271
Screw Extractor, Ezy-Out....270
Sewer Cleaning Tool, Plumbers'..293
Valve Refacer....302, 303
Severn Boilers....324
Sewage Filter Channels, Vitrified Clay....538
Filter Pipe, Vitrified Clay....538
Syphons, Miller....535
Sewer Augers....294
Cleaning Tools....292–296
Gas Traps, Palmer....532
Joint Compound....252, 253
Master, Oster....292
Pipe, Vitrified Clay....535
Pipe Cleaner....256
Pipe Fitting, Specials....537
Pipe Fittings, Vitrified Clay..536, 537
Pipe Saddles, Vitrified....537
Rod Couplings....296
Rod Heads....294
Rod Holders....294
Rod Sets, Plumbers'....293
Rods....292–296
Valves....532
Shafts, Drive, Pipe Machine, Toledo....262
Shallow Well Pumps....194, 195
Shampoo Faucets, Compression....467
Shampoo and Lavatory Supply Fittings....467
Shave Hooks....297
Sheaves, V Belt, Gates....247–250
Sheaves and V Belts, Gates....246
Sheet Copper Tempers, Roofing....506
Insulation....207
Lead....508
Packing....217, 218
Sheets—
Brass....506
Copper....506
Cork....216
Felt....218
Fibre....206
Shell Chucks, Expansion, Rod Hanger, Phillips....105

Page

Shells, Expansion, Rod Hanger, Phillips....105
Shelves, Glass, Bathroom.477, 479, 480
Shelving, Steel Lyons....309
Sherman Couplings, Hose....233
Heads, Spray....237
Menders, Hose....233
Nipples, Hose....234
Nozzles, Hose....236
Plugs, Fusible....169
Washers, Faucet....494
Shields, Expansion....104–107
Shock Absorbers; Josam....546
Shop Equipment, Lyon....308, 309
Shovels—
Empire Brand....304
Round Point....304
Square Point....304
Shower Baths....455, 456
Cabinets....451, 452
Curtain Holdback Hooks and Chains....459
Curtain Pins....459
Curtain Rod Flanges....459
Curtain Rods....459
Curtains....459, 460
Doors, Fiat....452, 453
Drains....515, 516
Drains and Traps, Combined....517
Fittings....455, 456
Heads....456, 457
Mixing Valves....456–459
Receptors....453
Stops....456
Transfer Valves and Bath Fillers, Combined....461
Shower and Bath Fittings, Combination....460, 461
Showers....455, 456
Hydrotherapeutic....369
Showers and Bath Fillers, Combined....460, 461
Showers and Faucets, Bath, Combined....460, 461
Shut-Off Cocks, Imperial....145
Siamese Connections, Standpipe...236
Siamese and Standpipe Connections....236
Sidewalk Cleaners....305
Scrapers....305
Si-Flo Back Syphon Preventers....486
Flush Valves, Speakman....486–488
Piston Units, Flush Valve...486, 488
Sifters and Bins, Flour, Berger....402
Sight Glasses, Pipe Line....148
Sight-Feed Lubricators, Lunkenheimer....124H, 184–186
Valves, Lunkenheimer....185
Silencers, Water Hammer, General....546
Sill Cocks, Compression....470
Drains, Josam....515
Simplex Frames, Tank....505
Sink Bolts....466
Brackets....416
Collars....466
Drain Boards, Enameled....415
Drain Boards, Hardwood....416
Drain Boards, Scullery....414, 415
Drain Plugs....465
Drains and Overflows....465
Faucets, Compression....462–464
Finishes....403
Gaskets....495
Legs, Adjustable....416
Stoppers....496

Page

Sink Strainers....465, 466
Strainers, Duriron....521
Strainers and Plugs....466
Trap Standards, Service....421, 422
Traps, Bent Tube....498
Traps, Cast Iron, Drainage....32
Sinks—
Cabinet....403–409, 413
Kitchen, Enameled....403–412
Kitchen, Galvanized....415
Kitchen, Monel Metal....413, 415
Kitchen, Plain....415
Kitchen, Stainless Steel....413, 415
Kitchen, Vitreous China....411
Laboratory, Duriron....522
Scullery....414, 415
Service....420, 421
Service, Hospital....368
Slop....420, 421
Slop, Hospital....368
Utility and Treatment, Combined....366
Wash....422
Wash-Up, Enameled, Surgeons'...366
Sinks and Laundry Trays, Combined....411, 412
Siphon, see Syphon
Sisson Joints, Insertable....530
Sizing Tools Chase....94
Skin Cleanser, Pax....475
Skinner Benders, Pipe....279, 280
Dressers....303
Hickeys, Adjustable....280
Reseating Tools....303
Skinner-Seal Clamps....95, 96
Saddles, Pipe....96
Slabs, Enameled, Infants'....368
Slants, Vitrified, Sewer Pipe....537
Slate Bolts....475
Sledge Caulking Irons....300
Hammers....284
Sledges, Blacksmiths'....284
Sleeve Gaskets, Pipe, Dresser....17
Nuts, Copper, Flared, Chase....91
Sleeves—
Brass, Compression, Imperial....92
Cast Iron, Soil Pipe....528
Cast Iron, Water Main....13
Dredging....226
Pipe, Dresser....17
Quaturn....493
Slice Bars, Engineers'....286
Slip Collars, Closet....532
Joint Fittings, Cast Brass, Casing....496, 497
Joint Washers, Brass....497
Joint Washers, Rubber....495
Slip-Fittings, Tank, Copper, Flared, Chase....91
Slip-On Flanges, Forged Steel, Tube, Turn....77, 78
Slip-Union Elbows, Copper, Flared Chase....91
Sloan Quiet-Flush Equipment.482, 483
Vacuum Breakers, Flush Valve...483
Valves, Floor, Urinal....485
Valves, Flush....482–485
Slop Sink Faucets, Compression....464
Sink Rim Guards....421
Sink Trap Standards....421, 422
Sinks....420, 421
Sinks, Hospital....368
Smooth-On Iron Cement....253
Snapin Toggle Bolts, Star....104
Snifter Relief Valves....158

S Page

Snips—
Metal, Pexto....283
Snubbers, Pressure, Ray....173
Soap, Pax....475
Soap Dishes....477–480
Dispensers, Liquid, Watrous....476
Dispensers, Pax....475
Dispensing Systems, Liquid, Watrous....476
Holders....477–480
Holders and Grab Bars, Combined....478, 479
Sockets—
Pipe Hanger....99
Wire Rope....312
Soda Ash....255
Soil Pipe, Cast Iron....522
Pipe Bands....528
Pipe Fittings, Cast Iron....522–531
Pipe Hooks....529
Pipe Rests....529
Pipe Saddle Hubs....530
Pipe Saddles....530
Straps....529
Pipe Test Plugs....296
Solder—
Acid-Core....509
Bar....508, 509
Half and Half....508
Rosin-Core....509
Wiping....509
Wire....509
Solder Bushings....510
Couplings, Hose....228
Fittings, Cast Brass, Casing....496, 497
Fittings, Cast Bronze, Chase....86–90
Fittings, Wrought Copper, Chase....86–90
Moulds, Bar....509
Pots....290
Seal, Boiler....255
Valves, Brass, Chase....134
Valves, Brass, Jenkins....114
Soldering Copper Handles....297
Coppers....297
Fluid, Nokorode....509
Flux....509
Furnaces, C & L....290, 291
Furnaces, Insto-Gas....289
Liquid, Nokorode....509
Nipples....510
Outfits, Prest-O-Lite....287, 288
Paste....509
Torches, Insto-Gas....289
Solenoid Gas Valves, Minneapolis-Honeywell....355
Water Valves, Sunbeam....351
Solid Flanges, Cast Iron, Extra Heavy....47
Flanges, Cast Iron, Standard....39
Solvent—
Drain Pipe....256
San....256
Soot Destroyer, Boyer....256
Spanners, Hose....235
Spanners and Wrenches, Hydrant, Combined....235
Speakman Heads, Shower....457
Piston Units, Flush Valve....486, 488
Preventers, Back Syphon, Si-Flo....486
Valves, Flush....486–488
Spear Heads, Revolving, Sewer Rod....294
Specials, Cast Iron Pipe, Water Main....13
Sewer Pipe Fittings....537
Sperzel Seats, Closet....439

S Page

Spigots and Flanges, Cast Iron, Water Main....13
Spiral Packing....217–219
Pipe, Taylor Forge....9
Spoons and Cock Wrenches, Cleanout, Hydrant, Combined....235
Spouts—
Gooseneck....370
Supply, Gooseneck....370
Spray Heads, Portable, Sherman....237
Heads, Sprinkler System....237
Hose, Paint....226
Nozzles....236
Spray Type Air Conditioners, Sunbeam....318
Spring Augers, Multicoil....294
Foot Valves, Clayton Mark....201
Joint Rules, Lufkin....305
Springs—
Bending, Pipe....297
Coiled, Flexible, Waste Cleaning....294, 295
Sprinkler Fittings, Cast Iron....22
System Spray Heads....237
Sprinklers—
Allen....237
Lawn....237
Sprocket Rims, Valve Wheel, Babbitt....142
Spud Cement....253
Flanges, Closet....496
Reducers, Closet....491
Washers Closet....495
Wrenches Closet....274, 299
Spuds—
Boiler, Brass....81
Brass, Boiler....81
Closet....491
Stainless Steel, Welding....68
Welding Stainless Steel....68
Spun Oakum....220
Spur-Geared Chain Hoists Yale....313
Square Point Shovels....304
Stable Cesspools....519
Vault Cesspools, Saaco....519
Stack Controls, Sunbeam....351
Stacking Boxes, Steel, Lyon....309
Stainless Steel Fittings....68
Pipe....11
Sinks, Kitchen....413, 415
Tubes....11
Stair Crosses, Malleable Iron, Railing....58
Tees, Malleable Iron, Railing....58
Stall Trimmings, Urinal and Closet 474
Stalls—
Shower, Fiat....451, 452
Urinal, Vitreous China....441–443
Standards, Trap, Service Sink 421, 422
Standing Overflows, Duriron....521
Standpipe Connections....236
Standpipe and Hydrant Control Units....235
Stands—
Barrel....188
Boiler, Range....502
Floor, Valve, Kennedy....539
Laundry Tray....417
Roll, Pipe, Grinnell....100, 101
Tool, Lyon....309
Tri-Stand, Vise, Ridgid....278
Vise....277–279
Stands and Pipe Benders, Vise, Martin....278

S Page

Star Anchors....104
Bolts, Toggle....104
Drills, Baltimore....301
Shields, Expansion....104
Valves, Flush....483, 484
Stays, Chain....473
Stazin Shields, Expansion....104
Steam Cocks, Brass....143
Cocks, Iron....143, 144
Coil Information....550
Gauge Cocks....165, 167
Gauge Syphons....169
Hose....224, 225
Hose Couplings....233
Information....550, 551
Mains, Sizes of....550
Packing....218
Pipes, Linear Expansion of....551
Pumps, American-Marsh....190
Regulators, Arco....357
Separators, Wright-Austin....156
Traps, Armstrong....159–162
Traps, Hoffman....360
Traps, Sarco....361
Valve Refacers....302
Whistles, Lonergan....141
Steel—
Hanger, Pipe....100
Steel Fittings, Ammonia, Vogt....63
Fittings, Drop-Forged, Flanged, Vogt....61–63
Fittings, Drop-Forged, Screwed Vogt....59–61
Fittings, Flanged, Lightweight Pipe....9
Fittings, Flanged, 150-Pound....65
Fittings, Flanged, 300-Pound....65
Fittings, Flanged, 600-Pound....66
Fittings, Flanged, 900-Pound....67
Fittings, Flanged, 1500-Pound....67
Fittings, Stainless, Flanged....68
Fittings, Stainless, Screwed....68
Pipe....2, 6–9, 11
Pipe Fittings, Dresser....14–17
Pipe Protection....6
Tapes, Flat, Waste Cleaning....294, 295
Tubes, Stainless....11
Tubing....11
Valves, Gate, Jenkins....123
Wool....282
Stem Nut Washers, Quaturn....493
Nuts, Quaturn....493
Stems—
Fuller, Adjustable....494
Quaturn....493
Steps, Manhole....546
Stillson Wrenches, Walworth....273
Stock Tanks....203, 204
Stocks and Dies—
Bolt, Beaver....264
Bolt, Reed....258
Bolt, Toledo....260
Pipe, Beaver....264–266
Pipe, Beaverette....265
Pipe, Reed....257, 258
Pipe, Ridgid....259
Pipe, Toledo....259–262
Tubing, Beaver....265
Tubing, Toledo....261
Stone Drills, Baltimore....301
Stop and Check Valves, Iron Body, Jenkins....117
Stoppers—
Bath....496
Lavatory....496
Rubber....496
Sink....496
Vitrified, Sewer Pipe....536

S

Page

Stops—
Brass....143
Compression....470, 471
Compression, Chase....511
Compression, McDonald....512
Compression, Scott....511
Copper Tubing, Chase....512
Corporation....513
Curb, Chase....513
Curb, Inverted Key, Patent Cap..512
Door....479
Gas Service....144
Ground Key....511, 512
Hydrant....513
Inverted Key, Diamond....512
Iron, Standard....143, 144
Laboratory, Mueller....511
Self-Closing....471
Shower....456
Steam, Brass....143
Steam, Iron....143, 144
Underground Service, Chase....513
Urinal, Self-Closing....471
Vulcabeston, Iron....143

Stops and Drains—
Compression, Chase....511
Compression, McDonald....512
Copper Tubing, Chase....512
Curb, Inverted Key, Patent Cap..512
Ground Key....512
Inverted Key, Diamond....512

Storage Heaters, Hot Water, Whitlock....504
Racks, Bar, Lyon....309
Tank Bushings, Underground....148
Tank Frames, Simplex....505
Tank Gauges....149
Tanks, Gasoline....150
Tanks, Hot Water....505
Tanks, Oil....150
Tanks, Open....203, 204
Tanks and Heating Units, Combined....504
Water Heaters....499–501

Storage and Wardrobe Cabinets, Combined, Lyon....308

Stove Bolts....103
Pipe, Fire Clay....215
Pipe Dampers....506
Pipe Fittings, Fire Clay....215

Stove and Furnace Cement....253

Stoves, Laundry....332

Strainers—
Flat....180
Pipe Line....163, 164
Sink....465, 466
Sink, Duriron....521
Suction Pipe....164, 180, 200, 201
Trap, Niagara....545
Urinal....474
Vitrified, Sewer Pipe....536
Water and Air, Watts....164
Well, Cook....199

Strainers and Plugs, Sink....466

Strainers and Regulators, Pressure, Watts....344

Strap Clamps....542
Vises, Reed....277
Wrenches, Warnock....273

Strapping, Hanger, Perforated....100

Straps—
Pipe....99, 100
Soil Pipe....529
Tube, Copper, Chase....88

Stream Regulators, Drinking Fountain....451

Street Washers, Total Eclipse....541

Strengths, Wire Rope....311

S

Page

Strips—
Center, Asphalt, Keystone....216
Mastic Board, Keystone....216

Strop Hooks....477–480

Suction Hose....226, 227
Pipe Strainers....164, 180, 200, 201
Pumps, Diaphragm, Goulds....191
Tees, McDaniel....180

Suction and Force Pumps, Plumbers'....297

Sulflo Cutting Oil....251

Sump Pump Covers, Penberthy....190
Pumps, Penberthy....891

Sunbeam Air Conditioners....316, 317
Blower-Filter Units, Furnace....319
Furnaces, Warm-Air....318
Humidifiers, Air Conditioner....318
Temperature Control Equipment.351

Sunrad Radiators....336

Super Excelo Belting....241

Superjustable Wrenches, Williams....275

Superrench Wrenches, Williams....275

Supirwin Screwdrivers....306

Supplies, Closet....491

Supplies and Parts Bins, Lyon....308

Supply Boilers, Hot Water....331, 332
Fittings, Lavatory, Wrist Control....370
Pipe Holders, Closet....490
Pipes, Bath....462
Pipes, Closet....491
Pipes, Lavatory....471, 472
Pipes, Lavatory, Hospital....370
Spouts, Gooseneck....370
Valves, Foot Control....369, 370

Supply and Drain Fittings, Bath..461
Fittings, Lavatory....466, 467
Fittings, Lavatory, Wrist Control....369

Supply and Shampoo Fittings, Lavatory....467

Supports—
Bath....382
Closet, Wall....429, 430
Lavatory....390
Pipe, Grinnell....101

Supreme Steel Wool....282

Sure Grip Clamps, Hose....234

Surface Aquastats, Minneapolis-Honeywell....354

Surgeons' Wash-Up Sinks, Enameled....366

Surgical Sink Interceptors, Josam..417

Swaged Nipples, Wrought....75

Swan-Neck Faucets....469

Swartwout Heads, Pipe, Exhaust..157

Sweat Fittings, Wrought Copper, Chase....86–90

Swett Brackets, Sink....416
Doors, Ash Pit or Flue....286
Grates, Hub, Soil Pipe....519
Stands, Boiler, Range....502

Swimming Pool Drains, Josam.517, 518
Pool Gutter Drains, Josam....518
Pool Inlet Connections, Josam....518
Pool Outlet Connections, Josam..518
Pool Overflow Connections, Josam.518

Swing Bars....479
Joints, Lunkenheimer....181
Joints, McDonald....148

Switch Controls, Water Level, Kisco....349

Switchboard Matting....216

S

Page

Switches—
Blower, Limit and Cut-In, Sunbeam....351
Blower, Sunbeam....351
Blower and Limit, Sunbeam....351
Cut-Off, Low-Water, McDonnell..356
Pressure, Water System, McDonald....195
Relief, Zone Control, Sunbeam....351

Swivel Joints, Barco....182
Reducer Couplings, McDonald....146

Sylphon Regulators, Temperature..350
Water Mixers....457

Syphon Pumps, Watson & McDaniel....179
Rings....495
Septic Tanks, San-Equip....533
Washers....495

Syphons—
Bell....489
Cone....489
Gauge, Steam....169
Sewage, Miller....535

Systems—
Dispensing, Liquid Soap, Watrous....476
Flow Control, Thrush....341
Heating, Hot Water, B & G....339
Heating, Hot Water, Size of Mains....550
Heating, Hot Water, Thrush....341
Heating and Ventilating, Warm-Air....320
Return-To-Boiler, Kisco-Bilt....349
Water, Shallow Well....194

T

T Branches, Acid-Proof, Drain Pipe, Duriron....520
Branches, Cast Iron, Soil Pipe....524, 525
Branches, Cast Iron, Soil Pipe, Insertable, Kafer....531
Branches, Drain Tile, Unglazed...539
Branches, Vitrified, Sewer Pipe...536

T & B Intakes, Baseboard....321
Registers, Air Conditioning....321

TSCO Brushes, Pipe Dope....254
Cement, Pipe Joint....252
Cement, Plastic, Stove and Furnace....253

TY Branches, Acid-Proof, Drain Pipe, Duriron....520
Branches, Cast Iron, Drainage....28
Branches, Hub, Drainage, Richmond....32
Branches, Special Tapped, Drainage, Richmond....32

TY Type Fittings, Closet, Blake...531

Table, Bundling, Pipe....1

Tables, Manicuring, Vitreous China.395

Tabor Spanners, Hose....235

Tack Bumpers....495

Taco Valves, Tempering....459

Tal's Benders, Pipe....279

Tank Balls, Closet....492
Bushings, Storage, Underground..148
Capacity in U. S. Gallons....549
Caps, Truck, McDonald....147
Car Reducer Couplings, McDonald....146
Faucets, Truck, McDonald....147
Fill Boxes....148
Fill Caps....148
Fittings, Closet....491, 492
Floats....151
Floats, Closet....490

T Page

Tank Frames, Simplex....505
Gauges....149
Heaters, Laundry....332
Jackets, Asbestos....504
Levers, Closet....490
Lift Wires, Closet....490
Nipples....97
Refill Tubes, Closet....490
Rods, Closet....490
Slip-Fittings, Copper, Flared, Chase....91
Thermostats, Klipfel....350
Unloading Hose....227
Valves....147

Tanks—
Acetylene, Prest-O-Lite....288
Air Receiving....204
Blow-Off....155
Closet....434
Compression....340
Expansion....348
Galvanized Steel....203, 204
Gas, Prest-O-Lite....288
Hydro-Pneumatic....204, 205
Pressure, B & G....340
Pressure, Pneumatic....204, 205
Pressure, Thrush....340
Septic, Robinson....534
Septic, San-Equip....533
Stock....203, 204
Storage, Gasoline....150
Storage, Hot Water....505
Storage, Oil....150
Storage, Open....203, 204
Urinal....434
Wagon....204
Water System....204, 205
Wood....204

Tanks and Heating Units, Storage, Combined....504

Tannate Belt Preserver....245
Discs and Washers, Hydraulic....221
Leather Belting....240
Packings, Leather....221

Tap Borers....297

Taper Tap Boiler Repair Plugs....292

Tape-Rules, Lufkin....305

Tapes, Flat Steel, Waste Cleaning....294, 295

Tapped Bushings, McDonald....148

Tapping Machines, Mueller....543

Taps, Pipe, GTD....271

Taps and Drills, Pipe, GTD....271

Target Hose....227

Taylor Thermometers....173

Taylor Forge Fittings, Flanged, Lightweight Pipe....9
Pipe, Spiral....9

Tees—
Basin, Cast Iron, Drainage....31
Branch, Cast Iron....21
Brass, Compression, Imperial....92
Brass, Flanged....85
Brass, Railing....58
Brass, S.A.E., Imperial....93
Brass, Screwed, Extra Heavy....85
Brass, Screwed, Standard....83, 84
Brass, Vent....509
Cast Brass, Casing....496
Cast Bronze, Solder, Chase....88
Cast Iron, Drainage....30, 31
Cast Iron, Flanged, Extra Heavy....42, 44–46, 48
Cast Iron, Flanged, Standard....34, 36, 37, 40
Cast Iron, Long Sweep....22
Cast Iron, Screwed, Extra Heavy. 26

T Page

Tees—
Cast Iron, Screwed Standard....19, 23, 24, 26
Cast Iron, Screwed, Weights of...547
Cast Iron, Sprinkler....22
Cast Iron, Water Main....13
Cast Steel, Flanged....65–67
Cleanout, Cast Iron, Soil Pipe....531
Copper, Flared, Chase....91
Copper, Flared, Underground Service, Chase....514
Crossover, Malleable Iron....52
Flue Pipe....505
Forged Steel, Flanged, Vogt....61
Forged Steel, Screwed, Vogt....59
Malleable Iron, A.A.R., Walworth. 53
Malleable Iron, Compression, Dresser....14
Malleable Iron, Hydraulic, Walworth....53
Malleable Iron, Railing....56–58
Malleable Iron, Screwed, Heavy..55
Malleable Iron, Screwed, Standard....50–52
Malleable Iron, Screwed, 300-Pound....54, 55
Malleable Iron, Union, Railroad..81
Railroad, Malleable Iron, Union..81
Semi-Steel, Ammonia, Vogt....63
Stainless Steel, Flanged....68
Stainless Steel, Screwed....68
Steel, Flanged, Lightweight Pipe..9
Suction, McDaniel....180
Test....531
Washtray, Copper, Flared, Chase. 91
Welding, Tube-Turn....72
Welding, Watson-Stillman....69
Wrought Copper, Solder, Chase.88, 89

Temperature Bulbs, Hoffman....343
Control Equipment....351–355
Controllers, Hoffman....343
Regulators....350–355
Relief Valves, Klixon....345, 346

Temperature, Vacuum and Pressure Valves, Watts....345

Temperature and Pressure Relief Valves, Klixon....346
Relief Valves, Thrush....340
Relief Valves, Watts....345

Tempering Valves, Taco....459

Tempers, Copper, Sheet, Roofing..506

Templates for Drilling Flanged Valves and Fittings, Cast Iron, Extra Heavy....47
for Drilling Flanged Valves and Fittings, Cast Iron, Standard...39

Tenders, Fire, Automatic....320

Terminal Fittings, Copper, Flared, Chase....91

Test Gauges, Inspectors'....173
Plug Rubbers....495
Plugs, Climax....296
Pumps, Hydraulic....170
Tees....531

Testers, Gauge, Pressure, Ashcroft....170

Testing Gauges and Proving Pumps, Gas Fitters'....297

Thermo-Cheks, B & G....339

Thermometers—
American....173–175
Ammonia....173
Angle Stem....173, 174
Brine....173
Cylindrical....173
Dial....175
Hot Water....173–175
Industrial....173–175

T Page

Thermometers—
Mixing Valve....458
Oblique Stem....175
Recording, Masoneilan....176
Side Angle Stem....175
Straight Stem....173, 174
Taylor....173

Thermometers and Combination Gauges, Hot Water....173

Thermostatic Traps, Hoffman....360
Traps, Sarco....361
Water Mixing Valves....458, 459

Thermostatic and Float Traps, Hoffman....360
Traps, Sarco....361

Thermostats—
Minneapolis-Honeywell. 351-353, 352
Sunbeam....351
Tank, Klipfel....350

Thimbles—
Cast Iron, Soil Pipe....528, 530
Wire Rope....312

Thread Cutting Oil....251

Threaded Rods, Brass....490

Threading, Pipe....7

Threading Machines, Pipe, Toledo....261–263
Machines, Pipe, Williams....266
Machines, Pipe and Bolt, Beaver....266, 267
Oil....251
Tools, Bolt, Beaver....264
Tools, Bolt, Reed....258
Tools, Bolt, Toledo....260
Tools, Pipe, Beaver....264–266
Tools, Pipe, Beaverette....265
Tools, Pipe, Reed....257, 258
Tools, Pipe, Ridgid....259
Tools, Pipe, Toledo....259–262
Tools, Tubing, Beaver....265
Tools, Tubing, Toledo....261

Threadless Fittings, Brass, Flagg-Seal....86

ThredOlets, Bonney....70

Throttle Valves, Brass....154
Valves, Brass, Lunkenheimer....124D, 129
Valves, Brass, McDonald....147
Valves, Iron Body, Lunkenheimer....124D, 131

Throw Latches, Closet Stall....475
Latches, Urinal Stall....475

Thrush Circulators, Water....341
Dual Control Units, Heating System....342
Flow Control Systems....341
Gauges and Hot Water Thermometers, Combination....173
Heaters, Water....348
Heating Systems, Hot Water....341
Tanks, Pressure....340
Valves, Flow Control....341
Valves, Reducing, Pressure....341
Valves. Relief....340–342
Valves, Relief and Reducing, Combined....342

Ticonderoga Graphite, Flake....251

Tile—
Building....212
Drain, Unglazed....593

Tile Conduit....207
Fittings, Drain, Unglazed....539

Tilette Porcelain Glaze....253

Tin, Bar....508

Tin Pipe, Block....506

Tinners' Snips, Pexto....283

T Page

Tite-Seal Compound, Gasket and Joint....253
Toggle Bolts, Star....104
Toilet Bowl Cleaner....256
Bowl Cushion Rings....492
Paper Holders....477–480
Toledo Benches, Work....279
Boring Tools, Ratchet....307
Cutters, Pipe....267
Die Heads, Bolt....260
Drives, Power....263
Oil, Thread Cutting....251
Pipe Machines....261–263
Reamers, Pipe....270
Shafts, Drive, Pipe Machine....262
Stands, Vise....279
Stocks and Dies, Bolt....260
Stocks and Dies, Pipe....259–262
Stocks and Dies, Tubing....261
Vises, Pipe....277
Tongs—
Fittings, Williams....272
Pipe, Williams....271, 272
Tonka Hose....223, 224
Tool Boxes....307, 308
Cases....307, 308
Chests....307, 308
Holders, Rawldrill....107
Kits....308
Stands, Lyon....309
Toolmakers' Vises, Reed....276
Tools—
Beading, Hand, Wiedeke....300
Bending, Tube....94
Boring, Ratchet, Toledo....307
Caulking....298–300
Caulking, Rawl-Anchor....105
Caulking, Rawls....107
Cleaning, Sewer....292–296
Cleaning, Waste....293–295
Conduit....296
Firing, Engineers'....286
Flanging, Chase....94
Flaring, Imperial....94
Flaring and Burnishing, Imperial....94
Flaring and Cutting, Tubing....93
Gasket, Baltimore....299
Lead Working, Plumbers'....297
Packing, Baltimore....299
Packing, Pilley....302
Reseating, Faucet....303
Reseating, Valve....302, 303
Scraping, Pilley....302
Sizing, Chase....94
Toothbrush Holders....479, 480
Toothbrush and Tumbler Holders, Combined....477–480
Top Washers, Compression....495
Tops, Chimney....214
Top-Snake Pipe Cleaners, Marco....295
Torch Lighters....287
Torches—
Blow, C & L....291
Insto-Gas....289
Total Eclipse Hydrants....541
Washers, Street....541
Tote Boxes, Lyons....309
Totrust Rust Preventive Paint....254
Towel Bars....477–480
Cabinets, Paper....476
Pins....479
Supply and Utility Cabinets....476
Tower Hose....223, 225
Traction Engine Cocks....167
Transfer Pumps, Rotary, Roper....191

T Page

Transfer Valves and Bath Fillers, Shower, Combined....461
Transmission Belting....240, 241
Trap Nipples, Brass....498
Screw Ferrules....510
Screws, Brass....510
Seal Valves, Phillips....519
Standards, Service Sink....421, 422
Strainers, Niagara....545
Traps—
Air, Armstrong....161
Back Water, Josam....517, 532
Back Water, Palmer....532
Bag, Brass....498
Basin, Cast Iron, Drainage....32
Bath, Cast Iron, Drainage....32
Cellar, Vitrified, Sewer Pipe....537
Drains and Cleanouts, Combined....517
Drum, Cast Iron....499
Drum, Lead....498
Float and Thermostatic, Hoffman....360
Float and Thermostatic, Sarco....361
Garage, Saaco....519
Grease....416, 417
Grease, San-Equip....534
Grease, Vitrified, Sewer Pipe....537
Half, Vitrified, Sewer Pipe....537
Hand Hole, Vitrified, Sewer Pipe....537
P, Acid-Proof, Drain Pipe, Duriron....520
P, Bent Tube....497, 498
P, Brass....497, 498
P, Cast Iron, Closet....529
P, Cast Iron, Drainage....31, 32
P, Cast Iron, Soil Pipe....529
P, Cast Iron, Threaded....498, 499
P, Lead....498
P, Vitrified, Sewer Pipe....537
Radiator, Hoffman....360
Radiator, Sarco....361
Running, Acid-Proof, Drain Pipe, Duriron....520
Running, Cast Iron, Drainage....31, 32
Running, Cast Iron, Soil Pipe....529, 530
Running, Vitrified, Sewer Pipe....537
S, Acid-Proof, Drain Pipe, Duriron....520
S, Bent Tube....497
S, Brass....497, 498
S, Cast Iron, Drainage....31, 32
S, Cast Iron, Soil Pipe....529
S, Cast Iron, Threaded....499
S, Lead....498
S, Vitrified, Sewer Pipe....537
Sand, Saaco....516
Sewer Gas, Palmer....532
Sink, Bent Tube....498
Sink, Cast Iron, Drainage....32
Steam, Armstrong....159–162
Steam, Hoffman....360
Steam, Sarco....361
Thermostatic, Hoffman....360
Thermostatic, Sarco....361
Traps and Drains, Combined....517
Tray Faucet Brackets....464
Trays—
Laundry, Alberene Stone....419, 420
Laundry, Cement....419
Laundry, Enameled....418, 419
Soap....477–480
Trays and Grab Bars, Soap, Combined....478, 479
Trays and Sinks, Laundry, Combined....411, 412
Teatment and Utility Sinks, Combined....366
Trench Brace Fittings, Duff-Norton....315
Braces, Duff-Norton....315
Pump Diaphragms....222

T Page

Trenjer Bubblers, Drinking Fountain....450
Trenton Couplings, Boiler, Brass....81
Triangle Drills....107
Tricrome Pins, Pipe Cutter....269
Rollers, Pipe Cutter....269
Wheels, Pipe Cutter....269
Trigger Oilers....188
Trimmings, Stall, Urinal and Closet....474
Trimo Cutters, Pipe....269
Cutters, Tubing....94
Wrenches....274
Trimo-Alloy Wrenches, Pipe....237
Trip Jacks, Duff-Norton....314
Triplex Plunger Pumps, Deming....193
Tri-Stands, Vise, Ridgid....278
Trough Seats, Navy....436
Truck Tank Caps, McDonald....147
Tank Faucets, McDonald....147
Tub Fillers....461
Fillers and Shower Transfer Valves, Combined....461
Fillers and Showers, Combined....460, 461
Hangers, Bath....371
Supports....382
Tube Benders....94
Bending Tools....94
Brushes, Boiler....285, 286
Brushes, Copper....95
Brushes and Scrapers, Combined....285
Cleaners....285, 286
Cutters, Imperial....93
Cutters, Ridgid....94
Cutters, Trimo....94
Cutters, Wiedeke....284
Expanders....284
Fittings, Brass, S.A.E., Imperial....93
Fittings, Copper, Flared, Chase....90, 91
Flarers, Wiedeke....284
Flaring Tools, Imperial....94
Flaring and Burnishing Tools, Imperial....94
Flaring and Cutting Tools....93
Rollers, Wiedeke....284
Sizing Tools, Chase....94
Straps, Copper, Chase....88
Tubes—
Boiler....11
Condenser....10
Covering....473
Extension, Brass....473
Locomotive....11
Overflow, Flush Valve, Closet Tank....490
Refill, Closet Tank....490
Stainless Steel....11
Tube-Turn Extras....74
Fittings, Welding....71–78
Flanges, Welding....76–78
Rings, Welding....74
Tubing—
Brass....83
Copper....82, 83
Fibre....206
Rubber, Ice Plant....227
Rubber, Pure Gum....227
Seamless Copper, Refrigerator....83
Steel....11
Water, Copper....82
Tubing Benders....94
Bending Tools....94
Brushes, Copper....95
Cutters, Imperial....93
Cutters, Ridgid....94
Cutters, Trimo....94

T

Page

Tubing Flaring Tools, Imperial 94
Flaring and Burnishing Tools, Imperial 94
Flaring and Cutting Tools 93
Racks, Lyon 309
Sizing Tools, Chase 94
Stocks and Dies, Beaver 265
Stocks and Dies, Toledo 261
Straps, Copper, Chase 88
Vises, Reed 277

Tubs—
Bath 372–385
Bath, Hospital 367
Laundry, Alberene Stone 419, 420
Laundry, Cement 419
Laundry, Enameled 418, 419

Tucker Connections, Cast Iron, Drainage 31

Tucks Packing 219

Tumbler Holders 477–480

Tumbler and Toothbrush Holders, Combined 477–480

Tumblin Toggle Bolts, Star 104

Turn Pins 297

Twisted Packing 218–220

U

U-Bolt Gate Valves, Jenkins 119
Packings, Leather 221

U.S. Injectors 176
Packing 217

Underground Service Flanging Tools, Chase 94
Service Pipe Fittings 513, 514
Service Stops, Chase 513
Storage Tank Bushings 148
Storage Tanks 150

Underwriters' Fire Hose 228
Gate Valves, Iron Body, Jenkins .. 121
Play Pipes 236

Union Couplings, Brass, S.A.E., Imperial 93
Couplings, Lead Flange 513
Couplings, Malleable Iron, Boiler. 81
Elbows, Balancing, DL 359
Elbows, Malleable Iron, Boiler 81
Elbows, Radiator, DL 359
Fittings, Malleable Iron 81
Nuts, Brass, S.A.E., Imperial 93
Return Bends, Malleable Iron, Ammonia, Vogt 63
Valve-Nipple Wrenches, Nye 274
Washers 495

Unions—
Brass, Compression, Imperial 92
Brass, Extra Heavy 83
Brass, Flange 85
Brass, Standard 83
Cast Bronze, Solder, Chase 86, 87
Cast Bronze, Underground Service, Chase 513
Copper, Flared, Chase 90
Flange, Brass, Extra Heavy 85
Flange, Brass, Standard 85
Flange, Cast Iron, Extra Heavy .. 25
Flange, Cast Iron, Standard 25
Flange, Cast Iron, Weights of 547
Flange, Forged Steel, Vogt 62
Flange, Malleable Iron, Flagg 80
Flange, Malleable Iron, Hydraulic 81
Flange, Malleable Iron, Standard. 80
Flange, Welding, Watson-Stillman 69
Forged Steel, Hi-Speed 80
Forged Steel, Petro 80
Forged Steel, Vogt 61, 62
Handle-Bar, Forged Steel 80
Kewanee, Walworth 80

U

Page

Unions—
Malleable Iron, Extra Heavy .. 79, 81
Malleable Iron, Ground Joint 79
Screwed, Forged Steel, Vogt 61
Stainless Steel, Screwed 63
Underground Service, Chase 513
Welding, Watson-Stillman 69

Unique Cloths, Wiping, Formed ... 509

Unispur Auger Bits, Greenlee 306

Unit Heaters, Modine 322
Humidifiers, Armstrong 162

Units—
Air Compressor, Worthington 205
Blower-Filter, Furnace, Sunbeam. 319
Blow-Off, Everlasting 141
Control, Hydrotherapy Department 368
Control, Standpipe and Hydrant .. 235
Draft, Automatic 320
Dual Control, Heating System, B & G 340
Dual Control, Heating System, Thrush 342
Heating, Oil, Oakmont 326
Lavatory, Hall-Mack 479
Piston, Flush Valve 486, 488
Pumping, Centrifugal, Deming ... 191
Quick Compression, Quaturn 493

Units and Storage Tanks, Heating, Combined 504

Unloader Pumps, Oberdorfer 191

Unloading Hose, Tank 227

Urinal Drains, Josam 515
Flush Valves, Sloan 482–485
Flush Valves, Speakman 486, 488
Flush Valves, Watrous 485, 486
Stall Door Bolts 475
Stall Hinges 475
Stall Throw Latches 475
Stall Trimmings 474
Stalls, Vitreous China 441–443
Stops, Self-Closing 471
Strainers 474
Tanks 434

Urinals—
Enameled 445
Vitreous China 440–444

Useful Information 547–556

Utica Boxes, Utility 189

Utility Boxes 189
Pipe Joint Compound 252

Utility and Treatment Sinks, Combined 366

V

V Belt Sheaves, Gates 247–250
Belting, Gates 245, 246
Belts, Gates 245, 246
Belts and Sheaves, Gates 246
Branches, Vitrified, Sewer Pipe ... 536

V-Flat Drives, Vulco Rope, Gates .. 246

Vacuum Breakers, Flush Valve, Sloan 483
Breaking Valves, Lonergan 158
Gauges, Lonergan 171, 172
Lifters, Clancy 307
Relief Valves, Watts 345
Valves, Radiator 362–364

Vacuum, Pressure and Temperature Valves, Watts 345

Valve Adapters, Radiator, Hoffman. 362
Boxes, Extension 542
Cleaner, Radiator 255
Discs, Jenkins 123
Discs, Lunkenheimer 126
Floor Stands, Kennedy 539
Handles, Radiator 142

V

Page

Valve Indicator Posts, Kennedy 539
Leathers 222
Refacers 302, 303
Reseaters 302, 303
Reseating Outfits 302, 303
Seat Dressers 302, 303
Stem Packing 218
Washers 495
Wheel Sprocket Rims, Babbitt ... 142
Wheels, Jenkins 142
Wrenches, Kennedy 546

Valve-Nipple Wrenches, Union, Nye 274

Valves—
Air, Radiator 362–364
Ammonia, Vogt 64
Angle, All-Iron, Jenkins 117
Angle, All-Iron, Lunkenheimer .. 124F
Angle, Brass, Hose, Jenkins 115
Angle, Brass, Jenkins 108–110, 114, 115
Angle Brass, Lunkenheimer 124B–124D, 124H, 125–127
Angle, Brass, O-B 135
Angle, Brass, Solder, Jenkins 114
Angle, Cast Steel, Jenkins 122
Angle, Forged Steel, Ammonia, Vogt 64
Angle, Forged Steel, Vogt 138
Angle, Iron Body, Jenkins ... 116, 117
Angle, Iron Body, Lunkenheimer 124A–124C, 126, 130
Angle, Semi-Steel, Ammonia, Vogt 64
Angle, Stainless Steel, Jenkins 122
Angle, Steel, Lunkenheimer 124E, 124H, 133
Anti-Syphon, DL 150
Automatic, Dial Type, Chace 142
Back Pressure, Iron Body 141
Back Water, Duriron 522
Back Water, Josam 532
Back Water, Palmer 532
Blow-Off, Everlasting 140, 141
Blow-Off, Jenkins 124
Blow-Off, Lunkenheimer ... 124E, 134
Boat Pump 203
Butterfly, Brass 154
Butterfly, Iron Body 154
By-Pass, Schaefer 154
Check, All-Iron, Horizontal, Clayton Mark 200
Check, All-Iron, Horizontal, Lunkenheimer 124F
Check, All-Iron, Swing, Lunkenheimer 124F, 130
Check, Brass, Angle, Jenkins 110, 111
Check, Brass, Angle, Lunkenheimer 124B–124D, 127, 128
Check, Brass, Ball, Lunkenheimer. 127
Check, Brass, Compression, Imperial 92
Check, Brass, Horizontal, Jenkins 110, 111, 114
Check, Brass, Horizontal, Lunkenheimer 124B–124D, 127, 128
Check, Brass, Horizontal, O-B 135, 136
Check, Brass, Horizontal, Solder, Chase 134
Check, Brass, Horizontal, Solder, Jenkins 114
Check, Brass, Lift, Lunkenheimer 124B, 124C, 128
Check, Brass, S.A.E., Imperial 93
Check, Brass, Swing, Jenkins. 111, 114
Check, Brass, Swing, Lunkenheimer 124B, 124C, 128
Check, Brass, Swing, O-B 135
Check, Brass, Swing, Solder, Chase 134

V Page

Valves—
Check, Brass, Swing, Solder, Jenkins....114
Check, Brass, Vertical, Jenkins...110
Check, Brass, Vertical, Lunkenheimer....127, 128
Check, Brass, Vertical, O-B....135
Check, Brass, Vertical, Solder, Chase....134
Check, Forged Steel, Angle, Vogt.138
Check, Forged Steel, Horizontal, Vogt....138
Check, Forged Steel, Horizontal and Vertical Combined, Vogt...139
Check, Iron Body, Angle, Jenkins....117, 118
Check, Iron Body, Horizontal, Jenkins....117–119
Check, Iron Body, Horizontal, Lunkenheimer....124A, 124C
Check, Iron Body, Lift, Jenkins....117, 118
Check, Iron Body, Swing, Jenkins....118, 119
Check, Iron Body, Swing, Lunkenheimer 124A, 124C, 130, 131
Check, Iron Body, Vertical, Jenkins....118
Check, Monel, Swing, Lunkenheimer....124E
Check, Semi-Steel, Ammonia, Vogt.... 64
Check, Steam Trap, Armstrong...160
Check, Steel, Angle, Lunkenheimer....124E, 134
Check, Steel, Horizontal, Lunkenheimer....124E, 134
Check, Steel, Swing, Lunkenheimer....124E, 134
Control, Hoffman....343
Control, Pressure and Relief, Penberthy....342
Corrosion-Resisting, Jenkins....122
Cross, Iron Body, Lunkenheimer..130
Expansion, Forged Steel, Ammonia, Vogt.... 64
Expansion, Semi-Steel, Ammonia, Vogt.... 64
Ferrenewo, Iron Body, Lunkenheimer....124B, 126
Float, Closet Tank....489, 490
Flush, Nibco....489
Flush, Speakman....486–488
Float, Klipfel....151
Floor, Urinal, Sloan....485
Flow Control, B & G....339, 340
Flow Control, Thrush....341
Flush, Sloan....482–485
Flush, Watrous....485, 486
Foot....201
Gas, Minneapolis-Honeywell....355
Gate, All Iron, Jenkins....119
Gate, All-Iron, Lunkenheimer...124F
Gate, Brass, Hose....114, 115
Gate, Brass, Jenkins....112–114
Gate, Brass, Lunkenheimer....124A–124D, 128, 129
Gate, Brass, O-B....136
Gate, Brass, Solder, Chase....134
Gate, Brass, Solder, Jenkins....114
Gate, Cast Steel, Jenkins....123
Gate, Forged Steel, Vogt....139, 140
Gate, Hub End, Kennedy....539
Gate, Iron Body, Indicator Post, Kennedy....539
Gate, Iron Body, Jenkins....119–122
Gate, Iron Body, Lunkenheimer....124A–124D, 131, 132
Gate, Iron Body, Underwriters', Jenkins....121
Gate, Lock, McDonald....147
Gate, Monel, Lunkenheimer....124E

V Page

Valves—
Gate, Stainless Steel, Jenkins....122
Gate, Steel, Lunkenheimer....124E, 133, 134
Globe, All-Iron, Jenkins....117
Globe, All-Iron, Lunkenheimer..124F
Globe, Brass, Hose, Jenkins....115
Globe, Brass, Jenkins....108–110, 114, 115
Globe, Brass, Lunkenheimer....124B–124D, 124H, 125–127
Globe, Brass, O-B....135
Globe, Brass, Solder, Chase....134
Globe, Brass, Solder, Jenkins....114
Globe, Cast Steel, Jenkins....122
Globe, Forged Steel, Ammonia, Vogt.... 64
Globe, Forged Steel, Vogt...136, 137
Globe, Iron Body, Jenkins...116, 117
Globe, Iron Body, Lunkenheimer....124A–124C, 126, 130
Globe, Semi-Steel, Ammonia, Vogt.... 64
Globe, Stainless Steel, Jenkins....122
Globe, Steel, Lunkenheimer....124E, 124H, 133, 134
High Duty, Brass, Lunkenheimer....124D
Hose, Brass....114, 115
Hose, Fire Line....115
Hose, Garden....115
Lever-Operated, All-Iron, Lunkenheimer....124F
Lever-Operated, Brass....154
Lever-Operated, Brass, Jenkins....108, 112, 124
Lever-Operated, Brass, Lonergan.141
Lever-Operated, Brass, Lunkenheimer....124D, 124G, 129
Lever-Operated, Iron Body, Jenkins....119
Lever-Operated, Iron Body, Lunkenheimer....124D, 131
Line, Loading, McDonald....147
Marine Service, Lunkenheimer...134
Mixing....456–459
Motorized, B & G....340
Motorized, Minneapolis-Honeywell....355
N-M-D, Brass, Lunkenheimer....124B, 124D, 124G, 125, 128
Needle, Brass, Jenkins....110
Needle, Brass, Lunkenheimer....124H, 127
Needle, Steel, Lunkenheimer....124H
Non-Return, Lunkenheimer....124E, 133, 134
Plug, Lubricated, Walworth..142, 143
Pop, Lunkenheimer....124G
Pres-Tem-Vac, Watts....345
Pump, Jenkins....223
Quick-Operating, All-Iron, Lunkenheimer....124F
Quick-Operating, Brass, Jenkins....108, 112, 124
Quick-Operating, Brass, Lonergan....141
Quick Operating, Brass, Lunkenheimer....124D, 124G, 129
Quick-Operating, Iron Body, Jenkins....119
Quick-Operating, Iron Body, Lunkenheimer....124D, 131
Radiator, Arco....358, 363
Radiator, Arco-Detroit....363
Radiator, Compression....364
Radiator, DL....357–359
Radiator, Hoffman....362
Radiator, Ideal....363, 358
Radiator, Jenkins....357
Radiator, Scovill....363
Radiator, Vent-Rite....363, 364

V Page

Valves—
Rapid Action, Brass, Jenkins....112
Reducing, Pressure, Klipfel....151
Reducing, Pressure, Mason..152, 153
Reducing, Pressure, Masoneilan....153, 154
Reducing, Pressure, Masoneilan...154
Reducing, Pressure, Mueller....152
Reducing, Pressure, Thrush....341
Reducing, Pressure, Watts....344
Regulating, Pressure, Klipfel....151
Regulating, Pressure, Mason.152, 153
Regulating, Pressure, Masoneilan....153, 154
Regulating, Pressure, Masoneilan.154
Regulating, Pressure, Mueller....152
Regulating, Pressure, Thrush....341
Regulating, Pressure, Watts....344
Relief, B & G....340
Relief, Klixon....345, 346
Relief, Lonergan....158
Relief, Lunkenheimer....124G
Relief, Thrush....340–342
Relief, Watts....344, 345
Relief and Boiler Drain, Combined, Kitco....346
Relief and Reducing, Combined, B & G....340
Relief and Reducing, Combined, Thrush....342
Renewo, Brass, Lunkenheimer....124B, 124C, 126, 127
Safety, Pop, Lonergan....157, 158
Safety, Pop, Lunkenheimer....124G
Seal, Trap, Phillips....519
Sewer, Josam....532
Sewer, Palmer....532
Sight Feed, Lunkenheimer....185
Solder, Brass, Chase....134
Solder, Brass, Jenkins....114
Stop and Check, Iron Body, Jenkins....117
Supply, Foot Control....369, 370
Tank....147
Tempering, Taco....459
Throttle, Brass....154
Throttle, Brass, Lunkenheimer....124D, 129
Throttle, Brass, McDonald....147
Throttle, Iron Body, Lunkenheimer....124D, 131
Vacuum, Radiator....362–364
Vacuum Breaking, Lonergan....158
Vent, Arco....363
Vent, Arco-Detroit....363
Vent, Hoffman....362
Vent, Ideal....363
Vent, Vent-Rite....363, 364
Water, Solenoid, Sunbeam....351
Whistle, Jenkins....124
Whistle, Lonergan....141
Y, Jenkins....124
Valves and Bath Fillers, Transfer, Shower, Combined....461
Varnish, Asphaltum....254
Vee Packings, Leather....221
Vent Caps, Cast Iron, Soil Pipe....529
Fittings, Brass....509
Fittings, Hub, Drainage, Richmond.... 32
Grates....519
Valves, Arco....363
Valves, Arco-Detroit....363
Valves, Hoffman....362
Valves, Ideal....363
Valves, Vent-Rite....363, 364
Ventilating Branches, Cast Iron, Soil Pipe....525
Ventilating and Heating Systems, Warm-Air....320

V

Page

Ventilation, Air Required for.....552
Vent-Rite Balancers.....364
Valves, Radiator.....363, 364
Vents—
Air.....147
Air, Hot Water Heating Systems, B & G.....340
Mushroom Type.....148
Quick.....362, 363
Vermiculite Insulating Cement....208
Victor Packing.....220
Vinco Boiler Seal, Liquid.....255
Cleaner.....255
Vise Jaw Caps, Reed.....276
Stands.....277–279
Stands and Pipe Benders, Martin.278
Tri-Stands, Ridgid.....278
Vise and Bender Posts, Pipe.....279
Vises—
Bench.....276, 277
Filers', Reed.....276
Machinists', Reed.....276
Pipe, Combination, Reed.....276
Pipe, Reed.....276, 277
Pipe, Ridgid.....277
Pipe, Toledo.....277
Pipe, Williams.....277
Post, Ridgid.....277
Sawing, Beaver.....277
Strap, Reed.....277
Toolmakers', Reed.....276
Tubing, Reed.....277
Vitreous Ware Cleaner.....256
Vitrified Clay Channel Pipe.....538
Clay Fittings, Sewer Pipe....536, 537
Clay Septic Tanks, Robinson.....534
Clay Sewer Pipe.....535
Vogel Closet Combinations.....431
Hopper Combinations, Frost-Proof.....430, 431
Hydrants, Garage.....541
Vogt Cocks, Gauge.....165
Fittings, Ammonia.....63
Fittings, Forged Steel, Flanged.61–63
Fittings, Forged Steel, Screwed.59–61
Flanges, Companion, Forged Steel.....61
Flanges, Welding, Ammonia.....63
Return Bends, Malleable Iron, Ammonia.....63
Strainers, Pipe Line.....163
Unions, Flange, Forged Steel.....62
Unions, Screwed, Forged Steel....61
Valves, Ammonia.....64
Valves, Angle, Forged Steel.....138
Valves, Angle, Forged Steel, Ammonia.....64
Valves, Angle, Semi-Steel, Ammonia.....64
Valves, Check, Forged Steel..138, 139
Valves, Check, Semi-Steel, Ammonia.....64
Valves, Expansion, Forged Steel, Ammonia.....64
Valves, Expansion, Semi-Steel, Ammonia.....64
Valves, Gate, Forged Steel...139, 140
Valves, Globe Forged Steel..136, 137
Valves, Globe, Forged Steel, Ammonia.....64
Valves, Globe, Semi-Steel, Ammonia.....64
Vulcabeston Cocks, Iron, Fairbanks.....143
Vulcan Stands, Vise.....278
Tongs, Fittings.....272
Tongs, Pipe.....271, 272
Vises, Pipe.....277

V

Page

Vulcan Brand Scoops.....305
Vulcanized Fibre Rods.....206
Fibre Sheets.....206
Vulco Rope V-Belts, Gates.....246
Rope V-Flat Drives, Gates.....246
Sheaves, V-Belt, Gates.....250
V Belts, Gates.....245, 246

W

WJ Cleaner, Boiler and Heating System.....255
WW Strainers, Cook.....199
Wabrico Cinder Blocks.....212
Wagon Tanks.....204
Walco Wrenches, Pipe.....273
Wall Brackets, Mixing Valve.....458
Cabinets, Kitchen, Berger.....402
Closet Supports.....429, 430
Coping.....213
Coping Fittings.....213
Coping Specials.....213
Insert Heaters, Lawson.....338
Mirrors, Hall-Mack.....482
Plates, Malleable Iron, Standard.....50, 51
Walltube Brackets, Radiator.....339
Walworth Fittings, Malleable Iron, A.A.R.....53
Fittings, Malleable Iron, Hydraulic.....53
Fittings, Malleable Iron, Railing.....56, 58
Pipe, Cast Iron, Threaded.....10
Strainers, Cast Iron.....200
Unions, Kewanee.....80
Unions, Malleable Iron, Extra Heavy.....79
Valves, Plug, Lubricated....142, 143
Wrenches, Pipe, Parmelee.....273
Wrenches Pipe, Stillson.....273
Wardrobe and Storage Cabinets, Combined, Lyon.....308
Warm-Air Furnaces, Sunbeam.....318
Heating and Ventilating Systems.320
Warnock Wrenches, Pipe.....273
Wash Basins, Earthenware.....423
Fountains.....423
Sink Faucets, Compression.....464
Sinks.....422
Tray Plugs.....465
Tray Stands.....417
Washer Cutters.....220
Retainers, Quaturn.....493
Washers—
Ball Cock.....495
Bedpan.....370
Cast Brass, Slip Joint.....497
Cone.....495
Faucet.....494
Float Valve.....495
Gauge Glass.....168, 169
Hose, Rubber.....235
Hydraulic, Leather.....221
Oil Cup, Lunkenheimer.....186
Packing, Quaturn.....493
Seat, Quaturn.....493
Slip Joint, Brass.....497
Slip Joint, Rubber.....495
Spud, Closet.....495
Stem Nut, Quaturn.....493
Street, Total Eclipse.....541
Syphon.....495
Top, Compression.....495
Union.....495
Valve.....495
Waste.....495
Wrought.....102

W

Page

Washers and Preservers, Gauge Glass.....169
Washington Bends, Cast Iron, Soil Pipe.....523, 527
Bends, Closet.....532
Cesspools Saaco.....519
Tees, Test.....531
Thimbles, Y.....530
Traps, Garage, Saaco.....519
Washtray Tees, Copper, Flared, Chase.....91
Wash-Up Sinks, Enameled, Surgeons'.....366
Waste—
Cotton.....220
Wool.....220
Waste Cans, Oily.....188
Cleaning Tools.....293–295
Nuts, Malleable Iron, Standard.50, 51
Pipe Cleaners.....293–295
Receptacles.....189
Washers.....495
Water Blenders.....456–459
Circulators, Hoffman.....343
Circulators, Thrush.....341
Closet Bowls.....432–434
Closet Chemicals.....256
Closet Fittings.....531, 532
Closet Seats.....435–440
Closet Supports, Wall.....429, 430
Closet Tanks.....434
Closets.....424–432
Closets, Hospital.....368
Closets, Marine.....432
Columns, Reliance.....166
Controls, Float Valve.....489
Coolers, Electric.....450
Coolers and Drinking Fountains, Combined.....449, 450
Gauges, Consolidated.....164
Gauges, Expansion Tank.....164
Gauges, Lonergan.....165
Gauges, Lunkenheimer.....164
Gauges, Prismatic.....166
Gauges, Reliance.....165, 166
Gauges, Self-Cleaning.....164
Hammer Silencers, General.....546
Heaters, Arco.....331
Heaters, Arcola.....331
Heaters, Auxiliary.....346
Heaters, Direct, Penberthy.....180
Heaters, Electric.....501
Heaters, Fire Pot, Hot Dog.....346
Heaters, Garbage Burning, Kewanee.....330
Heaters, Gas.....499, 500, 503
Heaters, Ideal.....331, 332
Heaters, Indirect, B & G.....347
Heaters, Indirect, Excelso.....347
Heaters, Indirect, General...346, 347
Heaters, Indirect, Thrush.....348
Heaters, Kerosene.....503
Heaters, Oil Burning.....503
Heaters, Steam-Operated, Penberthy.....180
Heaters, Storage.....499–501
Heaters and Boosters, Direct, Adjusto.....347
Hose.....223, 224
Hose Couplings.....233
Information.....547–549, 551
Level Switch Controls, Kisco.....349
Main Caulking Irons.....300
Main Fittings, Cast Iron.....13
Main Joint Compound.....508
Main Tapping Machines, Mueller.543
Main Yarning Irons.....300
Meters.....543, 544
Mixers.....456–459
Mixing Valves.....456–459

W

Page

Water Pails, Galvanized.....189
Paste, Cold.....206
Pipe, Cast Iron, Bell and Spigot.. 12
Regulators, Arco.....357
Relief Valves, Lonergan.....158
Relief Valves, Lunkenheimer....124G
Required per Minute to Feed Boiler.....551
Supply Boilers, Hot.....331, 332
System Pressure Switches.....195
System Tanks.....204, 205
Systems, Shallow Well.....194
Tubing, Copper..... 82
Valves, Solenoid, Sunbeam.....351

Water in Elbows, Friction of.....551

Water in Pipes, Friction of.....548

Waterid Quick Drains.....519

Waterproof Cement.....244

Watershed Leather Belting.....240

Watrous Liquid Soap Dispensers...476
Liquid Soap Dispensing Systems..476
Valves, Flush.....485, 486

Watson & McDaniel Pumps.....179

Watson-Stillman Fittings, Welding..... 69
Jacks, Hydraulic.....314
Pumps, Hand.....170

Watts Regulators, Pressure.....344
Regulators and Strainers.....344
Strainers.....164
Valves.....344, 345

Weights—
Belting, Rubber.....554
Cast Iron Fittings, Screwed.....547
Fibre Sheets, Vulcanized.....206
Lead and Hemp Required for Joints..... 12
Malleable Iron Fittings..... 52
Metal, Comparative.....555
Soil Pipe.....522
Soil Pipe Fittings.....522
Wire Rope.....311

Weights and Measures.....556

Welding Benches, Arc, Lyon.....308
Clamps, Jewel..... 79
Fittings, Bonney..... 70
Fittings, Tube-Turn.....71–78
Fittings, Watson-Stillman..... 69
Flanges, Ammonia, Vogt..... 63
Flanges, Forged Steel, Tube-Turn.....76–78
Flanges, Forged Steel, Vogt..... 63
Goggles.....288
Hose.....225
Nipples, Tube-Turn..... 73
Outfits, Prest-O-Weld.....287
Pipe Markers, Jewel..... 79
Rings, Tube-Turn..... 74
Rods, Oxweld.....288
Spuds, Stainless Steel..... 68

WeldOlets, Bonney..... 70

Well Cylinders.....197, 198
Points, Clayton Mark.....198
Strainers, Cook.....199
Valves, Check, Clayton Mark....200

Westmoreland Air Conditioners...316

Wheeling Pipe, Conductor.....506

Wheels—
Cutter, Pipe.....268, 269
Grinding.....282
Valve, Jenkins.....142

Whistle Valves, Jenkins.....124
Valves, Lonergan.....141

Whistles—
Air, Lonergan.....141
Steam, Lonergan.....141

Page

Whitehead Heaters, Water, Storage.....500
Sinks, Monel.....413, 415

Whitlock Heaters, Storage, Hot Water.....504

Wick Packing, Asbestos.....219
Packing, Candle.....219

Wiedeke Beading Tools, Hand.....300
Caulking Tools.....300
Cutters, Tube.....284
Expanders, Tube.....284
Flarers, Tube.....284
Rollers, Tube.....284

Wilbur & Williams Oil.....251

Williams Pipe Machines.....266
Stands, Vise.....278
Tongs.....271, 272
Vises, Pipe.....277
Wrenches.....275

Wilmington Rods, Fibre.....206
Sheets, Fibre.....206
Tubing, Fibre.....206

Wiping Cloths, Formed, Unique...509
Rags.....220
Solder.....509
Waste.....220

Wire Gauges, Comparison of.....556
Rope.....310–312
Rope Clamps.....312
Rope Clips.....312
Rope Information.....310, 311
Rope Sockets.....312
Rope Thimbles.....312
Solder.....509

Wires, Lift, Closet Tank.....490

Wizard Tape-Rules.....305

Wood Chisels, Baltimore.....299
Gouges, Baltimore.....299
Screws.....103

Wool—
Lead.....508
Mineral.....208
Rock.....208
Steel.....282

Wool Waste.....220

Worcester Brushes, Copper Fittings..... 95
Brushes, Copper Tubing..... 95
Brushes, Heater.....286

Work Benches, Pipe Vise.....279

Worthington Air Compressor Units.....205
Pumps, Centrifugal.....192

Worthington-Gamon Meters.....543

Wrecking Bars, Baltimore.....299

Wrenches—
Adjustable, Williams.....275
Basin.....274
Box, Williams.....275
Cock.....144
Engineers', Williams.....275
Faucet, Baltimore.....299
Knife Handle, Coes.....274
Monkey.....274
Parmelee, Pipe, Walworth.....273
Pipe, Parmelee, Walworth.....273
Pipe, Ridgid.....272
Pipe, Stillson, Walworth.....273
Pipe, Trimo-Alloy.....273
Pipe, Walco.....273
Pipe, Warnock.....273
Pipe, Williams.....271, 272
Radiator.....274, 299
Spanner.....235
Spud, Closet.....274, 299
Spud, Trimo.....274
Steel Handle, Coes.....274

Page

Wrenches—
Stillson, Walworth.....273
Strap, Warnock.....273
Superjustable, Williams.....275
Superrench, Williams.....275
Valve, Kennedy.....546
Valve-Nipple, Union, Nye.....274

Wrenches and Cleanout Spoons, Cock, Hydrant, Combined.....235

Wrenches and Spanners, Hydrant..235

Wright-Austin Separators.....156

Wrist Control Lavatory Supply Fittings.....370
Control Lavatory Supply and Drain Fittings.....369

Wrought Copper Fittings, Solder.86–90
Nipples.....75, 97
Pipe.....1–5
Pipe Data.....549

X

X Boiler Liquid.....255

X-Pando Pipe Joint Compound....252

X-Pandotite Cement.....253

Y

Y Bases, Flanged, Pop Safety Valve, Lonergan.....158
Bends, Brass, Screwed.....83, 84
Bends, Cast Iron, Screwed, Weights of.....547
Bends, Cast Iron, Soil Pipe.....527
Bends, Malleable Iron, Screwed.50–52
Branches, Acid-Proof, Drain Pipe, Duriron.....520
Branches, Brass, Screwed..... 85
Branches, Cast Iron, Drainage.28, 29
Branches, Cast Iron, Flanged, Extra Heavy.....46, 48
Branches, Cast Iron, Flanged, Standard.....38, 40
Branches, Cast Iron, Screwed, Extra Heavy..... 26
Branches, Cast Iron, Screwed, Standard.....19, 24, 26
Branches, Cast Iron, Soil Pipe.....525, 526, 531
Branches, Cast Iron, Soil Pipe, Insertable, Kafer.....531
Branches, Cast Iron, Water Main. 13
Branches, Cast Steel, Flanged..66, 67
Branches, Cleanout, Cast Iron, Soil Pipe.....531
Branches, Drain Tile, Unglazed...539
Branches, Forged Steel Screwed, Vogt..... 59
Branches, Special Tapped, Drainage, Richmond..... 32
Branches, Stainless Steel, Flanged. 68
Branches, Steel, Flanged, Lightweight Pipe..... 9
Branches, Vitrified, Sewer Pipe...536
Thimbles, Cast Iron, Soil Pipe....530
Valves, Jenkins.....124

Y's, Cast Brass, Casing.....497

Yale Hoists, Chain.....313

Yarning Irons.....300

Yokes, Meter, Mueller.....543

Yoloy Steel Pipe..... 2

Youngstown Pipe.....1–3

Z

Zone Control Damper Motors.....351
Control Power Boxes, Sunbeam...351
Control Relief Switches, Sunbeam.351
Control Thermostats, Sunbeam...351

Youngstown Standard Weight Pipe

Black and Galvanized

All Threads Taper ¾ Inch per Foot

Standard pipe is known and spoken of by its nominal inside diameter from ⅛ to 12 inches inclusive; larger sizes by its outside diameter and wall thickness.

Different weights of pipe of the same nominal size have the same outside diameter, the extra thickness always being on the inside. All weights given in the table are for black pipe and couplings. Galvanized pipe and couplings are slightly heavier. Random length pipe may average over or under 20 feet.

For pipe smoothed on the inside, known as reamed and drifted, an extra charge will be made above standard pipe.

For galvanized, or coated pipe, an extra charge will be made above black.

On orders calling for commercial sizes of pipe which are finished with threads and couplings, in sizes ⅛ to 12-inch, inclusive, and where orders specify quantity in linear feet, it is understood that random lengths fitted with threads both ends and coupling one end will be supplied and the measurement is charged from end to end, that is, over all, including coupling.

If cut lengths of any sizes are ordered, instructions must appear on the face of the order whether plain ends, threads only or threads and couplings are required.

Nom. Size In.	Per Foot	Weight, Pounds per Foot: Plain Ends	Weight, Pounds per Foot: Thrds. and Cplgs.	Diameter Inches: External	Diameter Inches: Internal	Thickness In.	Thds. per In.	Couplings: Lgth. In.	Couplings: Nominal O.D. In.	Test Press. PSI.: Butt Weld	Test Press. PSI.: Lap Weld
⅛	$.05½	.24	.24	.405	.269	.068	27	13/16	.563	700	700
¼	.06	.42	.42	.540	.364	.088	18	13/16	.719	700	700
⅜	.06	.57	.57	.675	.493	.091	18	13/16	.875	700	700
½	.08½	.85	.85	.840	.622	.109	14	19/16	1.063	700	700
¾	.11½	1.13	1.13	1.050	.824	.113	14	1⅝	1.313	700	700
1	.17	1.68	1.68	1.315	1.049	.133	11½	2	1.576	700	700
1¼	.23	2.27	2.28	1.660	1.380	.140	11½	2 1/16	1.900	800	1000
1½	.27½	2.72	2.73	1.900	1.610	.145	11½	2 1/16	2.200	800	1000
2	.37	3.65	3.68	2.375	2.067	.154	11½	2⅛	2.750	800	1000
2½	.58½	5.79	5.82	2.875	2.469	.203	8	3⅛	3.250	800	1000
3	.76½	7.58	7.62	3.500	3.068	.216	8	3¼	4.000	800	1000
3½	.92	9.11	9.20	4.000	3.548	.226	8	3⅜	4.625	...	1200
4	1.09	10.79	10.89	4.500	4.026	.237	8	3½	5.000	...	1200
5	1.48	14.62	14.81	5.563	5.047	.258	8	3¾	6.296	...	1200
6	1.92	18.97	19.18	6.625	6.065	.280	8	4	7.390	...	1200

Weights and dimensions are nominal.

Permissible variation in weight, 5 per cent above and 5 per cent below for all sizes except those starred (*) on which the permissible variation is 10 per cent and 3½ per cent below.

Furnished with threads and couplings and in random lengths unless otherwise ordered. Seamless pipe in standard sizes and weights in 2⅜-inch o.d. and larger also available.

Bundling Table

Approximate Number of Feet and Weight per Bundle

Size.....inches	⅛	¼	⅜	½	¾	1	1¼	1½
Pieces in a Bundle.....	30	24	18	12	7	5	3	3
Feet in a Bundle.....	600	480	360	252	147	105	63	63
Weight.....pounds	144	202	202	214	166	176	144	172

Youngstown Extra Strong and Double Extra Strong Pipe

Black and Galvanized

All Threads Taper ¾-Inch per Foot

Furnished with plain ends and in random lengths unless otherwise ordered.

Random length of extra strong and double extra strong pipe is considered to be 12 feet to 22 feet, we have to have the privilege, however, of supplying not exceeding 5 per cent of total order in lengths from 6 to 12 feet, unless order specifies otherwise.

When either extra strong or double extra strong pipe is ordered with threads only, or with threads and couplings, pipe is threaded with standard threads and equipped with line pipe couplings. When extra strong pipe is ordered with API threads and couplings, pipe is threaded with line pipe threads and equipped with line pipe couplings.

For pipe fitted with threads and couplings, an extra charge will be made above plain ends. For cut lengths, an extra charge will be made above random. For galvanized, or coated pipe, an extra charge will be made above black.

In addition to sizes and weights listed, seamless pipe can be furnished in standard sizes and weights in 2⅜-inch outside diameter and larger.

All weights and dimensions are nominal.

Extra Strong Pipe

Nom. Size In.	Per Foot	Wt., Lb. per Ft., Plain Ends	Diameter Inches: External	Diameter Inches: Internal	Thickness In.	Threads per In.	Test Press. PSI.: Butt-Weld	Test Press. PSI.: Lap-Weld
⅛	$.12	.31	.405	.215	.095	27	850	....
¼	.07½	.54	.540	.302	.119	18	850	....
⅜	.07½	.74	.675	.423	.126	18	850	....
½	.11	1.09	.840	.546	.147	14	850	....
¾	.15	1.47	1.050	.742	.154	14	850	....
1	.22	2.17	1.315	.957	.179	11½	850	....
1¼	.30	3.00	1.660	1.278	.191	11½	1300	....
1½	.36½	3.63	1.900	1.500	.200	11½	1300	....
2	.50½	5.02	2.375	1.937	.218	11½	1300	1800
2½	.77	7.66	2.875	2.323	.276	8	1300	1800
3	1.03	10.25	3.500	2.900	.300	8	1300	2500
3½	1.25	12.51	4.000	3.364	.318	8	....	2500
4	1.50	14.98	4.500	3.826	.337	8	....	2500
5	2.08	20.78	5.563	4.813	.375	8	....	2400
6	2.86	28.57	6.625	5.761	.432	8	....	2300
8	4.34	43.39	8.625	7.625	.500	8	....	2100
10	5.48	54.74	10.750	9.750	.500	8	....	1700
12	6.55	65.42	12.750	11.750	.500	8	....	1400

Permissible variation in w ight is 5 per cent above and below.

Double Extra Strong Pipe

½	$.32	1.71	.840	.252	.294	14	1000	....
¾	.35	2.44	1.050	.434	.308	14	1000	....
1	.37	3.66	1.315	.599	.358	11½	1000	....
1¼	.52½	5.21	1.660	.896	.382	11½	1400	....
1½	.65	6.41	1.900	1.100	.400	11½	1400	....
2	.91	9.03	2.375	1.503	.436	11½	....	*2200
2½	1.37	13.70	2.875	1.771	.552	8	....	*2200
3	1.86	18.58	3.500	2.300	.600	8	....	*2500
4	2.76	27.54	4.500	3.152	.674	8	....	*2500
5	3.86	38.55	5.563	4.063	.750	8	....	*2500
6	5.32	53.16	6.625	4.897	.864	8	....	*2500
8	7.25	72.42	8.625	6.875	.875	8	....	*2500

Permissible variation in weight is 10 per cent above and below.

Bundling Table for Extra Strong Pipe

Approximate Number of Feet and Weight per Bundle

Size.....inches	⅛	¼	⅜	½	¾	1	1¼	1½
Pieces in a Bundle.....	30	24	18	12	7	5	3	3
Feet in a Bundle.....	600	480	360	252	147	105	63	63
Weight, Bundle...pounds	186	254	263	272	216	228	188	229

Bundling Table for Double Extra Strong Pipe

Approximate Number of Feet and Weight per Bundle

Size.....inches	½	¾	1	1¼	1½
Pieces in a Bundle.....	7	5	3	3	3
Feet in a Bundle.....	140	100	60	60	60
Weight, Bundle.....pounds	240	244	220	313	384

*Furnished in seamless only.

Large O.D. Steel Pipe

Plain Ends

All Weights and Dimensions are Nominal

O.D. In.	Wall Thickness, Inches 1/4 Per Ft.	1/4 Wt. Lb. per Ft.	9/32 Per Ft.	9/32 Wt. Lb. per Ft.	5/16 Per Ft.	5/16 Wt. Lb. per Ft.	3/8 Per Ft.	3/8 Wt. Lb. per Ft.
14	$3.67	36.71	....	.....	$4.56	45.68	$5.45	54.56
15	3.93	39.38	....	.....	4.90	49.02	5.85	58.57
16	4.20	42.05	....	.....	5.23	52.36	6.25	62.58
18	4.74	47.39	....	.....	5.90	59.03	7.05	70.59
20	5.27	52.73	....	.....	6.57	65.71	7.85	78.60
22	....	.....	$6.52	65.24	7.23	72.38	8.66	86.61
24	....	.....	7.13	71.25	7.90	.....	9.46	94.62

O.D. In.	Wall Thickness, Inches 7/16 Per Ft.	7/16 Wt. Lb. per Ft.	1/2 Per Ft.	1/2 Wt. Lb. per Ft.	9/16 Per Ft.	9/16 Wt. Lb. per Ft.	5/8 Per Ft.	5/8 Wt. Lb. per Ft.
14	$6.33	63.37	$7.20	72.09	$8.07	80.73	$8.92	89.28
15	6.80	68.04	7.74	77.43	8.67	86.73	9.59	95.95
16	7.27	72.71	8.27	82.77	9.27	92.74	10.26	102.63
18	8.20	82.06	9.34	93.45	10.47	104.76	11.59	115.98
20	9.14	91.41	10.41	104.13	11.67	116.77	12.93	129.33
22	10.07	100.75	11.48	114.81	12.87	128.79	14.26	142.68
24	11.00	110.10	12.54	125.49	14.08	140.80	15.60	156.03

O.D. In.	Wall Thickness, Inches 11/16 Per Ft.	11/16 Wt. Lb. per Ft.	3/4 Per Ft.	3/4 Wt. Lb. per Ft.	7/8 Per Ft.	7/8 Wt. Lb. per Ft.
14	$9.77	97.75	$10.61	106.13	$12.26	122.65
15	10.50	105.09	11.41	114.14	13.20	132.00
16	11.24	112.43	12.21	122.15	14.13	141.34
18	12.71	127.12	13.81	138.17	16.00	160.04
20	14.18	141.80	15.41	154.19	17.87	178.73
22	15.64	156.49	17.02	170.22	.....	.....
24	17.11	171.17	18.62	186.22	.....	.....

The permissible variation in weight is 10 per cent above or 10 per cent below.

Pipe will be shipped in random lengths, plain ends, unless otherwise ordered.

For cut lengths, an extra charge above random will be made.

For threaded pipe an extra charge above plain end will be made.

Youngstown Reamed and Drifted Pipe

A welded or seamless pipe made especially for use in water wells. May be driven.

Reamed on the ends, and drifted to insure inside clearance. Supplied in 16 to 22-foot lengths, with threaded ends and recessed couplings.

Nominal Size Inches	Weight, Pounds per Foot: Threads and Couplings	Weight, Pounds per Foot: Plain Ends	Wall Thickness Inches	Diameter Inches: Outside	Diameter Inches: Inside	Threads per Inch
1	1.70	1.68	.133	1.315	1.049	11½
1¼	2.30	2.27	.140	1.660	1.380	11½
1½	2.75	2.72	.145	1.900	1.610	11½
2	3.75	3.65	.154	2.375	2.067	11½
2	4.00	3.94	.167	2.375	2.041	11½
2½	5.90	5.79	.203	2.875	2.469	8
3	7.70	7.58	.216	3.500	3.068	8
3½	9.25	9.11	.226	4.000	3.548	8
4	11.00	10.79	.237	4.500	4.026	8
5	15.00	14.62	.258	5.563	5.047	8
6	19.45	18.97	.280	6.625	6.065	8

Nominal Size Inches	Couplings: Length Inches	Couplings: O.D. Inches	Couplings: Weight Pounds	Test Pressure PSI: Butt Welded	Test Pressure PSI: Lap Welded or Grade A
1	2¾	1.576	.52	700	700
1¼	2¾	1.900	.60	800	1000
1½	2¾	2.200	.84	800	1000
2	3⅜	2.750	1.58	800	1000
2	3⅜	2.750	1.58	...	1000
2½	3 15/16	3.250	2.32	800	1000
3	4 1/16	4.000	3.80	800	1000
3½	4 3/16	4.625	5.53	...	1200
4	4 5/16	5.200	7.14	...	1200
5	4½	6.296	9.57	...	1200
6	4 11/16	7.390	12.32	...	1200

Permissible variation in weight, 5% above and 5% below.

Taper of threads is ¾ inch per foot on diameter for all sizes.

Youngstown Line Pipe

Youngstown Pipe is made from the ore to the finished product by a single organization. It is inspected most carefully and will be found clean, ductile, and easily cut and threaded.

Furnished with threads and couplings and in random lengths unless otherwise ordered. Taper of threads is ¾-inch diameter per foot length for all sizes.

The permissible variation in weight for any length of pipe is 10 per cent above and 3½ per cent below, but the carload weight shall not be more than 1¾% under the calculated weight.

Size Inches	Wt. Lb. per Foot: Plain Ends	Wt. Lb. per Foot: Threads and Couplings	Diameter, Inches: External	Diameter, Inches: Internal	Thickness Inches	Threads per Inch	Per Foot
⅛	.24	.25	.405	.269	.068	27	$.06
¼	.42	.43	.540	.364	.088	18	.06½
⅜	.57	.57	.675	.493	.091	18	.06½
½	.85	.86	.840	.622	.109	14	.09
¾	1.13	1.14	1.050	.824	.113	14	.12
1	1.68	1.70	1.315	1.049	.133	11½	.17½
1¼	2.27	2.30	1.660	1.380	.140	11½	.23½
1½	2.72	2.75	1.900	1.610	.145	11½	.28
2	3.65	3.75	2.375	2.067	.154	11½	.37½
2½	5.79	5.90	2.875	2.469	.203	8	.59
3	7.58	7.70	3.500	3.068	.216	8	.77
3½	9.11	9.25	4.000	3.548	.226	8	.93
4	10.79	11.00	4.500	4.026	.237	8	1.10
5	14.62	15.00	5.563	5.047	.258	8	1.50
6	18.97	19.45	6.625	6.065	.280	8	1.94
8	24.70	25.55	8.625	8.071	.277	8	2.54
8	28.55	29.35	8.625	7.981	.322	8	2.92
10	31.20	32.75	10.750	10.192	.279	8	3.25
10	34.24	35.75	10.750	10.136	.307	8	3.55
10	40.48	41.85	10.750	10.020	.365	8	4.17
12	43.77	45.45	12.750	12.090	.330	8	4.55
12	49.56	51.15	12.750	12.000	.375	8	5.12

All weights and dimensions are nominal.

Yoloy Steel Pipe

Good quality steel is required for the production of pipe because of the form in which it is made and the processes used in its manufacture. Pipe as a rule is buried or so installed that replacements are difficult to make and, in some instances, represent an expense greater than the value of the material.

Yoloy is the result of extensive research for a high strength, corrosion resistant steel to meet the need for pipe possessing these characteristics.

This low-alloy steel is adaptable to standard, line, oil country, water well and water main purposes.

Essentially a nickel and copper steel with elements varied to provide specific properties.

Slow to oxidize and even when melted does not lose the elements of nickel and copper.

Properties are as follows: corrosion resistance; yield strength; endurance limit; impact value; and elongation.

Weldability is one of the outstanding features of Yoloy. Welds produced are approximately the same strength and ductility as the parent metal.

Yoloy is made continuous welded, butt welded, lap welded, seamless or electrically welded, depending upon the size and use.

Write for further information and prices.

Youngstown Plain End Pipe

For Gas and Oil Lines

Ends Finished for Specified Couplings or Welded Joints

This table is intended for the determination of sizes and thicknesses for long lines.

The permissible variation in weight for all plain end pipe for gas and oil lines is in accordance with A.P.I. specifications.

Barlow's formula, with a safety factor of 4, was used in calculating the listed working pressures that are given for Lap-weld, Grade A and Grade B Seamless Line Pipe. To obtain the working pressure for other factors of safety, multiply the pressure shown by 4 and divide by the safety factor desired.

All weights and dimensions are nominal.

Standard Line Pipe

Size O.D. Inches	Weight Pounds per Foot	Wall Thickness Inches	Test Pressure, PSI. Lap Welded & Grade A	Grade B	Grade C	O.H. Iron & Wrought Iron, Lap Welded & O.H. Seamless
3½	6.63	.188	1900	2200	2500	1500
	7.58	.216	2200	2500	2500	1800
	8.68	.250	2500	2500	2500	2100
	9.67	.281	2500	2500	2500	2300
	10.25	.300	2500	2500	2500	2500
4½	8.64	.188	1500	1800	2200	1200
	10.00	.219	1700	2000	2500	1400
	10.79	.237	1900	2200	2500	1500
	11.35	.250	2000	2300	2500	1600
	12.67	.281	2200	2500	2500	1800
	13.98	.312	2500	2500	2500	2000
	14.98	.337	2500	2500	2500	2200
6⅝	12.89	.188	1000	1200	1500	800
	14.97	.219	1200	1400	1800	950
	17.02	.250	1400	1600	2000	1100
	18.97	.280	1500	1800	2300	1200
	21.07	.312	1700	2000	2500	1400
	23.06	.344	1900	2200	2500	1500
	25.03	.375	2000	2400	2500	1600
	28.57	.432	2300	2500	2500	1900
8⅝	16.90	.188	800	900	1200	650
	19.64	.219	900	1100	1400	750
	22.36	.250	1000	1200	1600	850
	24.70	.277	1200	1300	1700	950
	27.74	.312	1300	1500	2000	1000
	28.55	.322	1300	1600	2000	1000
	30.40	.344	1400	1700	2200	1100
	33.04	.375	1600	1800	2300	1300
	38.26	.438	1800	2100	2500	1500
	43.39	.500	2100	2400	2500	1700
10¾	24.60	.219	750	850	1100	600
	28.04	.250	850	1000	1300	700
	31.20	.279	1000	1200	1400	800
	34.24	.307	1000	1200	1500	800
10¾	38.20	.344	1100	1300	1700	900
	40.48	.365	1200	1400	1800	1000
	48.19	.438	1500	1700	2200	1200
	54.74	.500	1700	2000	2500	1300
12¾	33.38	.250	700	800	1100	600
	37.45	.281	800	950	1200	650
	41.51	.312	900	1000	1300	700
	43.77	.330	1000	1200	1400	800
	45.55	.344	1000	1200	1500	800
	49.56	.375	1100	1200	1600	850
	57.53	.438	1200	1400	1900	1000
	65.42	.500	1400	1600	2100	1100
14	45.68	.312	800	950	1200	650
	50.14	.344	900	1000	1300	700
	54.57	.375	950	1100	1400	750
	63.37	.438	1100	1300	1700	900
	72.09	.500	1300	1500	1900	1000
16	52.36	.312	700	800	1100	550
	57.48	.344	750	900	1200	600
	62.58	.375	850	1000	1300	700
	72.72	.438	1000	1100	1500	800
	82.77	.500	1100	1300	1700	900
18	59.03	.312	600	750	950	500
	64.82	.344	700	800	1000	550
	70.59	.375	750	900	1100	600
	82.06	.438	900	1000	1300	700
	93.45	.500	1000	1200	1500	800
20	65.71	.312	550	650	850	450
	72.16	.344	600	700	950	500
	78.60	.375	700	800	1000	550
	91.41	.438	800	900	1200	650
	104.13	.500	900	1000	1400	700

Special Line Pipe

Size O.D. Inches	Weight Pounds per Foot	Wall Thickness Inches	Test Pressure, PSI. Lap Welded & Grade A	Grade B	Grade C	O.H. Iron & Wrought Iron, Lap Welded & O.H. Seamless
3½	4.51	.125	1300	1500	1900	1000
	5.58	.156	1600	1900	2400	1300
4	5.17	.125	1100	1300	1700	900
	6.41	.156	1400	1600	2100	1100
	7.63	.188	1700	2000	2500	1400
	9.11	.226	2000	2400	2500	1600
	10.01	.250	2200	2500	2500	1800
	11.17	.281	2500	2500	2500	2000
	12.51	.318	2500	2500	2500	2300
4½	5.84	.125	1000	1200	1500	800
	7.25	.156	1200	1500	1900	1000
5 9/16	9.02	.156	1000	1200	1500	800
	10.76	.188	1200	1400	1800	950
	12.49	.219	1400	1700	2100	1100
	14.62	.258	1700	1900	2500	1300
	15.87	.281	1800	2100	2500	1500
	17.52	.312	2000	2400	2500	1600
	19.16	.344	2200	2500	2500	1800
	20.78	.375	2400	2500	2500	1900
10¾	21.15	.188	650	750	950	500
12¾	29.28	.219	600	700	950	500
14	36.71	.250	650	750	950	500
	41.21	.281	700	850	1100	600
16	42.05	.250	550	650	850	450
	47.22	.281	650	750	950	500
18	47.39	.250	500	600	750	400
	53.22	.281	550	650	850	450
20	52.73	.250	450	500	700	350
	59.23	.281	500	600	750	400
22	72.38	.312	500	600	750	400
	79.51	.344	550	650	850	450
	86.61	.375	600	700	900	500
	100.75	.438	700	850	1100	550
	114.81	.500	800	950	1200	650
24	79.06	.312	450	550	700	350
	86.85	.344	500	600	750	400
	94.62	.375	550	650	850	450
	110.10	.438	650	750	1000	550
	125.49	.500	750	850	1100	600

The permissible variation in weight for any length of pipe is 10 per cent above and 3½ per cent below; but the carload weight shall not be more than 1¾ per cent under the calculated weight.

Byers Genuine Wrought Iron Pipe

For Water, Steam, Air, Gas, and Oil

A. M. Byers Company, Pittsburgh, Pennsylvania, has manufactured Genuine Wrought Iron Pipe of the highest quality since 1864. Genuine Wrought Iron is a two component metal consisting of high purity iron and iron silicate—an inert, non-rusting, glasslike slag. The slag content amounts to about 3 per cent by weight and is distributed throughout the iron base metal in the form of threads or fibres which extend in the direction of rolling.

Genuine Wrought Iron differs both chemically and structurally from all other ferrous metals commonly used in the manufacture of pipe. It possesses certain characteristics which are of particular value where long service life is desired. In any piping installation, the cost of the pipe alone is but a fraction of the total overall cost of the ready-to-operate system, and since the value of the entire investment depends on the life of the pipe, it is obvious that durability of the piping material is of the utmost importance.

Characteristics

Corrosion Resistance

Genuine Wrought Iron is an excellent material to use where corrosion is encountered. Its durability is attributed in part to purity of the iron base metal and freedom from segregated impurities, but of far greater importance are the thousands of siliceous slag fibres embedded in the metal. These fibres serve in one capacity as a mechanical barrier against the progress of corrosion, forcing it to spread over the surface rather than pit or penetrate into the metal. The fibres also influence the chemical composition, density, and adherence to the surface of any corrosion products formed. Thus, the rust products serve to protect the underlying metal by forming a natural coating.

Resistance to Vibration

In many services, fatigue, caused by shock or constant vibration, is an important factor. Genuine Wrought Iron is widely used under these conditions because of its inherent ability to withstand fatigue failure. The slag fibres which confer on the metal a tough, fibrous structure are responsible for this desirable property.

Protective Coatings

Experience proves that either paint or galvanizing will adhere better and last longer on Genuine Wrought Iron than on other metals. The natural surface is microscopically rougher than that of other metals, and therefore, provides a better "tooth" or anchorage for paints. In galvanizing, the metal is pickled in acid, and this accentuates the roughness of the surface with the result that the zinc coating is firmly keyed to the surface. The weight of the zinc coating on Genuine Wrought Iron is normally 25 to 40 per cent heavier than on other metals, and this results in longer life for the coating.

Cutting and Threading

Genuine Wrought Iron has a uniformly soft texture which makes it easy to cut and assures clean, sharp threads so desirable for making permanently tight joints. Threading is easy because the slag fibres are at right angles to the thread, causing the chips to crumble and fall away from the dies.

Weldability

Genuine Wrought Iron has excellent welding characteristics, and any of the commonly used welding processes, such as, oxy-acetylene, electric fusion, electric resistance, or forge welding, may be employed.

Pipe Bending

All Byers Genuine Wrought Iron Pipe has better "bendability" due to finer and more uniform slag distribution, coupled with special care in finishing to avoid cold straining of the metal. This is an exclusive Byers feature, and it is not available in any other wrought iron pipe.

Identifying Markings

Pipe

All sizes of Byers Genuine Wrought Iron Pipe, both black and galvanized, except ⅛-inch pipe, has the name Byers Iron rolled on the surface of the metal every few feet for permanent identification. In addition, a red spiral stripe is painted on each length of all sizes for quick identification on the job.

Couplings

All Byers Genuine Wrought Iron couplings are permanently marked with the letter B within a keystone impressed in the metal.

Nipples

Byers Genuine Wrought Iron nipples are furnished in all sizes. They are manufactured from new, tested, and full weight pipe in accordance with the Commercial Standards of the Department of Commerce and comply with the specifications of the American Society for Testing Materials for Welded Wrought Iron Pipe.

Every Byers nipple is carefully marked to establish its identity and to assure the customer that he is receiving Genuine Wrought Iron.

With the exception of Close Nipples (which are marked with a red band around the center, it being impractical to stamp on top of the threads) all sizes are machine stamped with the word Byers and the weight. For example, Byers Standard would be marked Byers Std., or Byers Extra Strong would be marked Byers X Stg.

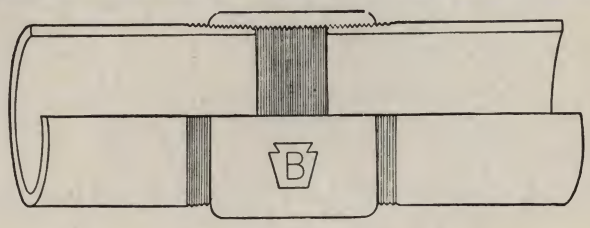
It is essential that all nipples used in a wrought iron piping installation be wrought iron. To use nipples of other material is to invite trouble. Service conditions in nipples are frequently more severe than in other parts of a piping system. For example, in steam return lines, condensate often collects in horizontal nipples if care is not taken to provide adequate slope. In water lines, turbulent flow in fittings may accelerate corrosion, and in any system, physical stresses may be concentrated at nipples.

For these reasons, it is often desirable to use extra strong wrought iron nipples with a standard weight wrought iron piping system. Under no circumstances should nipples of any other material be used with wrought iron pipe.

Byers Genuine Wrought Iron Pipe

For Water, Steam, Air, Gas and Oil

Black and Galvanized—All Weights and Dimensions Are Nominal



Standard Weight

Size Inches	Weight per Foot, Lb. Per Foot	Threads and Couplings	Plain Ends	Weld	Diameter, Inches External	Internal	Thickness Inches	Threads per Inch	Test Pressure Pounds Butt	Lap	Couplings External Diam. Inches	Length Inches
1/8	$.05½	.24	.24	Butt	.405	.266	.069	27	700	....	.563	13/16
1/4	.06	.42	.42	Butt	.540	.360	.090	18	700	....	.719	13/16
3/8	.06	.56	.56	Butt	.675	.489	.093	18	700	....	.875	13/16
1/2	.08½	.85	.85	Butt	.840	.617	.111	14	700	....	1.063	19/16
3/4	.11½	1.13	1.13	Butt	1.050	.819	.115	14	700	....	1.313	1 5/8
1	.17	1.68	1.67	Butt	1.315	1.043	.136	11½	700	....	1.576	2
1¼	.23	2.28	2.27	*	1.660	1.374	.143	11½	700	1000	1.900	2 1/16
1½	.27½	2.73	2.71	*	1.900	1.604	.148	11½	700	1000	2.200	2 1/16
2	.37	3.67	3.65	*	2.375	2.060	.158	11½	700	1000	2.750	2⅛
2½	.58½	5.81	5.79	Lap	2.875	2.450	.212	8	...	1000	3.250	3⅛
3	.76½	7.61	7.57	Lap	3.500	3.059	.221	8	...	1000	4.000	3¼
3½	.92	9.20	9.10	Lap	4.000	3.538	.231	8	...	1000	4.625	3⅜
4	1.09	10.88	10.79	Lap	4.500	4.016	.242	8	...	1000	5.000	3½
5	1.48	14.81	14.61	Lap	5.563	5.036	.263	8	...	1000	6.296	3¾
6	1.92	19.18	18.97	Lap	6.625	6.053	.286	8	...	1000	7.390	4
8	2.50	25.00	24.69	Lap	8.625	8.059	.283	8	...	800	9.625	5¼
8	2.88	28.80	28.55	Lap	8.625	7.967	.329	8	...	1000	9.625	5¼
10	3.20	32.00	31.20	Lap	10.750	10.181	.284	8	...	600	11.750	5¾
10	3.50	35.00	34.24	Lap	10.750	10.124	.313	8	...	800	11.750	5¾
10	4.12	41.13	40.48	Lap	10.750	10.005	.372	8	...	900	11.750	5¾
12	4.50	45.00	43.77	Lap	12.750	12.077	.336	8	...	600	14.000	6⅛
12	5.07	50.70	49.56	Lap	12.750	11.985	.382	8	...	800	14.000	6⅛

The permissible variation in weight is 5 per cent above or 2½ per cent below nominal weight.

Extra Strong

Size In.	Per Foot	Wt. Lb. per Ft. Plain Ends	Weld	Diameter, In. External	Internal	Thickness In.	Test Pressure Pounds Butt	Lap	Couplings External Diam. Inches	Length Inches
1/8	$.12	.31	Butt	.405	.207	.099	700	....	.563	1 1/16
1/4	.07½	.53	Butt	.540	.295	.122	700	....	.719	1 5/8
3/8	.07½	.73	Butt	.675	.417	.129	700	....	.875	1 5/8
1/2	.11	1.08	Butt	.840	.539	.151	700	....	1.063	2⅛
3/4	.15	1.47	Butt	1.050	.735	.157	700	....	1.313	2⅛
1	.22	2.17	Butt	1.315	.949	.183	700	....	1.576	2⅝
1¼	.30	2.99	*	1.660	1.269	.195	1500	2500	2.054	2¾
1½	.36½	3.63	*	1.900	1.491	.204	1500	2500	2.200	2¾
2	.50½	5.02	*	2.375	1.929	.223	1500	2500	2.875	3¼
2½	.77	7.66	Lap	2.875	2.311	.282	....	2000	3.375	4⅛
3	1.03	10.25	Lap	3.500	2.887	.306	....	2000	4.000	4¼
3½	1.25	12.50	Lap	4.000	3.350	.325	....	2000	4.625	4⅜
4	1.50	14.98	Lap	4.500	3.811	.344	....	2000	5.200	4½
5	2.08	20.77	Lap	5.563	4.797	.383	....	1800	6.296	4⅝
6	2.86	28.57	Lap	6.625	5.743	.441	....	1800	7.390	4⅞
8	4.34	43.38	Lap	8.625	7.604	.510	....	1500	9.625	5¼
10	5.48	54.73	Lap	10.750	9.729	.510	....	1200	11.750	5¾
12	6.55	65.41	Lap	12.750	11.729	.510	....	1100	14.000	6⅛

The permissible variation in weight is 5 per cent above and 2½ per cent below nominal weight.

Double Extra Strong

1/2	$.32	1.71	Butt	.840	.226	.307	700	....	1.063	2⅛
3/4	.35	2.44	Butt	1.050	.413	.318	700	....	1.313	2⅛
1	.37	3.65	Butt	1.315	.576	.369	700	....	1.576	2⅝
1¼	.52½	5.21	Butt	1.660	.874	.393	2200	....	2.054	2¾
1½	.65	6.40	*	1.900	1.078	.411	2200	2500	2.200	2¾
2	.91	9.02	Lap	2.375	1.480	.447	....	2500	2.875	3¼
2½	1.37	13.69	Lap	2.875	1.742	.565	....	2500	3.375	4⅛
3	1.86	18.58	Lap	3.500	2.270	.615	....	2500	4.000	4¼
3½	2.30	22.85	Lap	4.000	2.697	.651	....	2500	4.625	4⅜
4	2.76	27.54	Lap	4.500	3.119	.690	....	2500	5.200	4½
5	3.86	38.55	Lap	5.563	4.028	.768	....	2000	6.296	4⅝
6	5.32	53.16	Lap	6.625	4.857	.884	....	2000	7.390	4⅞
8	7.25	72.42	Lap	8.625	6.835	.895	....	2000	9.625	5¼

The permissible variation in weight is 10 per cent above and 10 per cent below nominal weight.

Threads are cut to American Modified Pipe Thread Standard with ¾-inch taper per foot.

For cut lengths, an extra charge will be made above random lengths.

For galvanized, asphalted, painted, wrapped, or coated pipe, an extra charge will be made above black pipe.

*Can be furnished in either butt or lapwelded.

The following footnotes apply to Standard Weight:

Furnished with threads and couplings and in random length of 16 to 22 feet with not more than 5 per cent of the total amount of lengths as jointers, unless otherwise ordered.

The weight per foot of pipe with threads and couplings is based on a length of 20 feet including the coupling.

When ordering 8, 10 or 12-inch sizes, please specify weight of pipe desired.

The following footnotes apply to both Extra Strong and Double Extra Strong:

Regularly furnished in plain ends, and in random lengths of 12 feet and over; and for double extra strong, 5 per cent may be 6 to 12 foot lengths.

When fitted with threads only, threads and couplings, or for cut lengths, an extra charge will be made above plain end random lengths.

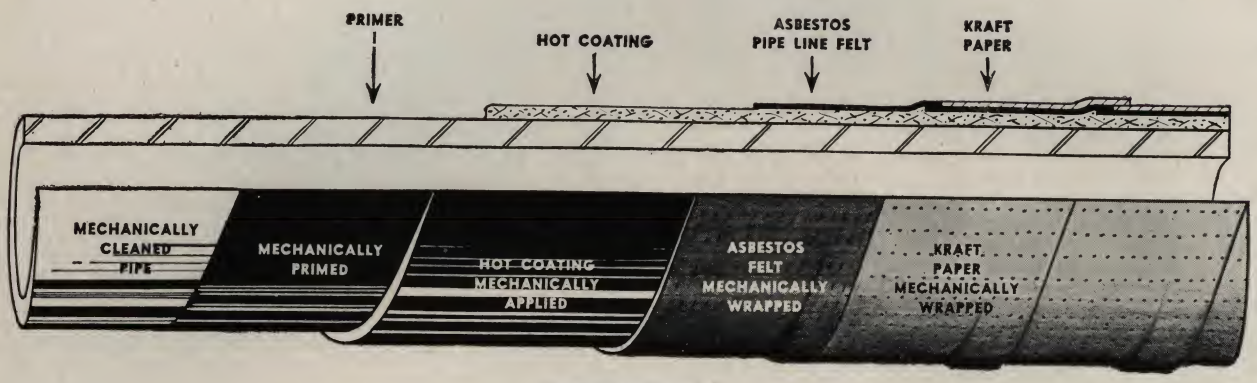
Threaded and coupled weight per foot and threads per inch will be furnished upon request.

Steel Pipe Protection

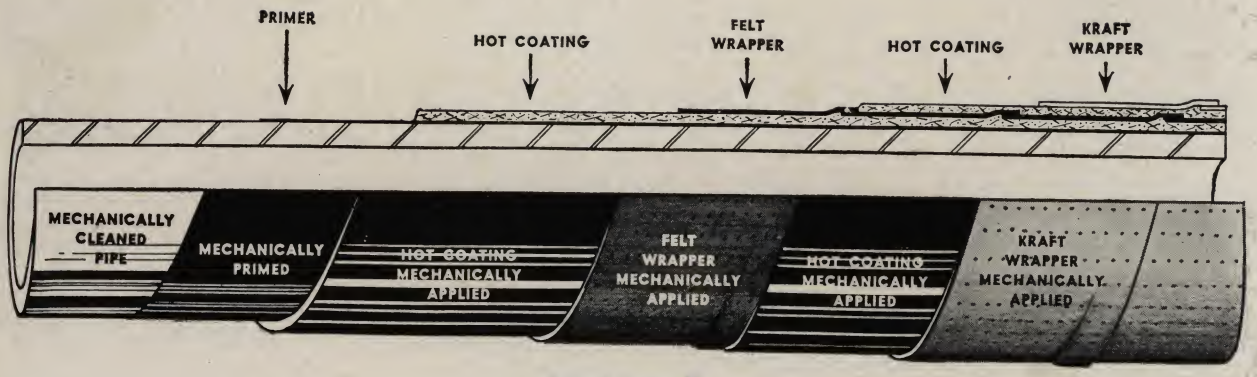
Steel pipe laid underground is subject to corrosion due to moisture, soil acids, electrolysis, and many other defective elements. Pipe protected by the application of hot coating in combination with inorganic non-soluble wrappers has long been recognized by the gas, oil, and water industries as assurance of longer pipe life.

The application of pipe protected material adds but little to the cost of steel pipe and results in longer pipe life, deferring replacements which invariably are more costly than the original installation.

The following two cuts show coating Specification A and for additional protection coating Specification B.



Specification A



Specification B

The following materials can be applied in accordance with the above specifications.

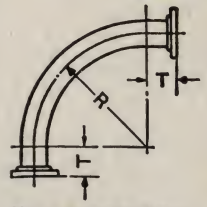
Asphalt
Barrett Pipe Line Enamel
Barrett Waterworks Enamel
Bitumastic 70-B Enamel
Ennjay Enamel
Riley Filled Pitch Enamel
Riley No. 230 Enamel
No-Ox-Id A3-A7-B3-B7

Other materials on request.

When ordering or requesting prices, indicate Specifications A or B together with coating material desired, stating quantities and sizes of pipe to be coated. Pipe can be ordered in single or double random lengths. Lined pipe can also be furnished. Coating, wrapping, and lining meets A.W.W.A., Federal and 34 YA Naval Specifications.

Pipe Bends

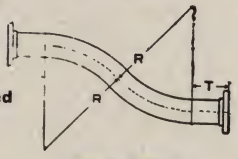
Steel or Genuine Wrought Iron



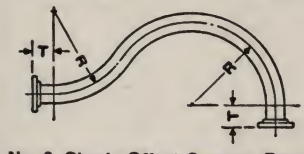
No. 1, Quarter Bend
No. 1½ Angle Bend
46° to 89°

No. 3,
45° Bend
No. 3½ Angle Bend
Less than 45°

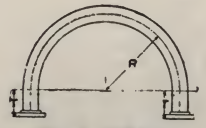
No. 4, Crossover



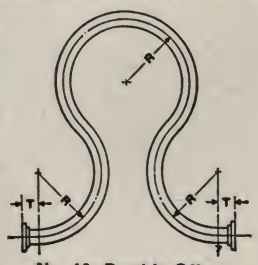
No. 5, Offset



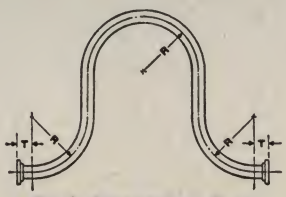
No. 2, Single Offset Quarter Bend



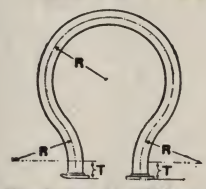
No. 7, U Bend
No. 7½ Angle Bend
91° to 179°



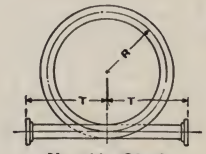
No. 10, Double Offset
Expansion U Bend



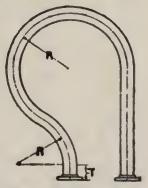
No. 9, Expansion U Bend



No. 8, Double Offset
U Bend



No. 11, Circle
Bend



No. 6, Single
Offset U Bend

Size Pipe In.	R Minimum Recommended Radius Std. or Ex. Strong Inches	R Shortest Radii to which Pipe Can Be Bent †Steel Pipe Standard Weight Pipe In.	†Steel Pipe Extra Strong Weight Pipe In.	†Genuine Wrought Iron Pipe Standard Weight Pipe In.	†Genuine Wrought Iron Pipe Extra Strong Weight Pipe In.	T Minimum Length of Tangent Std. or Ex. Strong Threaded Ends or Screwed Flange In.
¼	1¼	1	⅝	1¼	1	1
⅜	1⅞	1¼	¾	1⅞	1½	1¼
½	2½	1½	1	2½	2	1½
¾	3¾	1¾	1¼	3	2½	1¾
1	5	2	1½	4	3	2
1¼	6¼	2¼	1¾	5	4	2
1½	7½	2½	2	6	5	2½
2	10	3	2½	8	5	3
2½	12½	5	4¼	10	8	4
3	15	8	6	12	10	4
3½	17½	10	8	14	12	5
4	20	12	10	16	12	5
5	25	18	14	20	15	6
6	30	22	15	26	18	7
8	40	30	23	30	28	9
10	50	36	30	36	32	12
12	60	46	36	46	42	14
*14OD	70	60	48	60	54	16
*16OD	96	80	60	80	70	18
*18OD	108	90	66	90	80	18
*20OD	120	100	72	100	90	18
*24OD	144	144	108	144	122	18

*For sizes 14-inch O.D. and larger pipe, the radii shown under headings of Standard Weight Pipe are based upon using pipe with a wall thickness of 7/16-inch or lighter; the radii shown under headings of Extra Strong Weight Pipe are based upon using pipe with a wall thickness of ½-inch or heavier.

†Threaded ends, screwed or welded flanges.

Pipe Cutting and Fitting

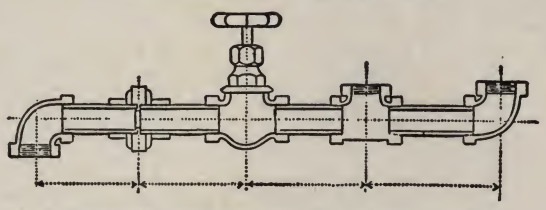


Diagram Showing Screwed Valves and Fittings

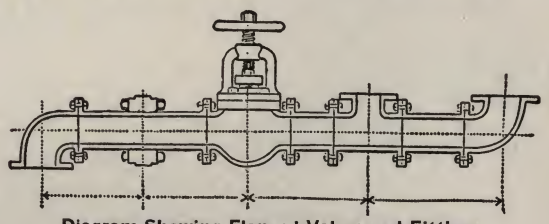


Diagram Showing Flanged Valves and Fittings

We are in a position to furnish all sizes of pipe—cut, threaded, fitted and beveled for welding—to your specifications.

In laying out work of this kind, great care should be taken in making sketches. All measurements should be given center to center as shown in diagrams. It is also necessary to know for what purpose the pipe is to be used and the pressure pipe will be required to stand.

If flanged fittings are to be used, state if desired drilled and if with bolts and gaskets complete. Flanges, flanged fittings and valves are drilled in multiples of four, so that they may be made to place in any quarter and bolts straddle the center line. It is always advisable to send templates when drilling of valves or fittings is required.

Prices upon application.

Wrought Steel Headers

With Welded-In Nozzles

Header has nozzles welded in and is equipped with flanges on both ends and on nozzles. Flanges may be cast iron, steeliron or forged steel. Headers of any practicable length without joints can be furnished.

All welded headers are tested whether specified or not.

Inquiries or orders should be accompanied by sketch giving detail measurements.

Prices upon application.

Pipe Savers

Pipe saver flange threads into the fitting with pipe. When forced into the pipe, bulge is flattened, forcing tapered end of pipe saver against pipe. End of pipe saver is tapered to fit pipe over or under standard diameter. Furnished to fit standard pipe unless otherwise specified.

Size In.	Reg. Each	Chrome N.P. Each	No. in Ctn.	Wt. Lbs.
½	$.12	$.21	100	2½
¾	.16	.25	100	3
1	.19	.30	100	3⅜
*1¼	.22	.32	100	4¾
*1½	.25	.37	100	5¼
*2	.31	.50	100	11
*2½	.44	.62	50	8
*3	.62	.87	50	10
*4	1.00	1.25	50	17
*6	2.20	2.50	...	....
8	3.45	4.05	...	....

*Also available for extra heavy pipe at same prices.

Pipe Columns

Allowable Concentric Loads in Kips

Unit Stress—American Institute of Steel Construction—1936

Tables give safe loads in tons of 2000 pounds for standard, extra strong, and double extra strong pipe, used as columns or struts with flat ends.

The safe loads have been computed from the formula:

$$S=1+\frac{50000}{\frac{L^2}{36000R^2}}$$

Where S=fiber stress in pounds per square inch of sectional area. L=unsupported length of column in inches, and R=radius of gyration in inches. A safety factor of 6 has been used throughout. For any other safety factor, multiply the values given by the ratio of the safety factor; for example, to use the factor 4, multiply by 6/4 or 1½.

Safe load values above upper zigzag line are for ratios of l/r not over 200; those below zigzag line are for ratios up to 120 l/r.

Standard Pipe

Lgth. Ft.	2	2½	3	3½	4	5	6	8	10	12
	Size of Pipe, Inches									
	Thickness, Inches									
	.154	.203	.216	.226	.237	.258	.280	.322	.365	.375
40	..	..	..	..	..	..	..	60	110	163
36	..	..	..	..	..	..	32	68	123	179
33	..	..	..	..	..	..	36	75	135	190
30	..	..	..	..	..	25	41	82	147	200
27	..	..	..	..	..	29	46	93	158	209
24	..	..	..	..	18	33	52	104	167	217
22	..	..	..	15	21	37	58	110	173	222
20	..	..	..	17	24	41	64	116	178	227
18	..	..	14	20	27	46	70	121	182	231
16	..	..	16	23	30	51	75	125	187	234
14	..	11	19	26	35	56	80	129	190	237
13	6	12	20	28	38	59	82	131	192	239
12	6	13	22	31	40	61	84	133	194	240
11	7	14	24	33	42	63	86	135	195	241
10	8	16	26	35	44	65	87	136	196	243
9	9	18	29	37	46	66	89	137	197	244
8	10	20	31	39	48	68	90	138	198	244
7	12	22	32	40	49	69	91	139	199	245
6	14	24	34	42	50	70	92	140	200	246
5	15	26	35	43	52	71	93	141	201	247
Area of Metal Square In., A	1.075	1.704	2.228	2.680	3.174	4.300	5.581	8.399	11.91	14.58
Radius of Gyration, r	.7871	.9474	1.164	1.337	1.510	1.878	2.245	2.938	3.674	4.377

Extra Strong Pipe

Lgth. Ft.	2	2½	3	3½	4	5	6	8	10	12
	Size of Pipe, Inches									
	Thickness, Inches									
	.218	.276	.300	.318	.337	.375	.432	.500	.500	.500
40	..	..	..	..	..	..	..	90	146	213
36	..	..	..	..	..	..	48	102	163	235
33	..	..	..	..	..	..	53	111	181	249
30	..	..	..	..	..	35	60	122	197	263
27	..	..	..	..	..	40	68	138	211	275
24	..	..	..	..	25	47	77	155	225	286
22	..	..	..	..	29	51	84	165	232	293
20	..	..	..	23	32	57	94	174	240	299
18	..	..	18	26	36	63	104	182	246	304
16	..	..	21	30	41	72	112	189	252	309
14	..	14	25	35	47	79	119	196	257	313
13	..	15	27	37	51	83	122	199	259	315
12	8	17	29	41	55	86	125	201	261	317
11	10	19	32	44	58	89	128	204	263	319
10	11	20	35	48	61	91	131	206	265	320
9	12	23	38	50	64	94	133	208	267	321
8	14	27	41	53	66	96	135	210	268	323
7	16	29	43	55	68	98	137	212	270	324
6	19	32	45	57	70	99	139	213	271	325
5	21	34	47	59	71	101	140	214	272	326
Area of Metal Square In., A	1.177	2.254	3.016	3.678	4.407	6.112	8.405	12.76	16.10	19.24
Radius of Gyration, r	.7665	.9241	1.136	1.307	1.477	1.839	2.195	2.878	3.628	4.335

Bursting Pressures of Pipes

Calculated by Barlow's Formula $P=2\frac{St}{D}$

P=pressure in pounds per square inch
t=wall thickness in inches; D=external diameter in inches
S=tensile stress in pounds per square inch
for welded pipe, ultimate stress=50,000 lb. per sq. in.
for A-Grade Seamless, =50,000 lb. per sq. in.
for B-Grade Seamless, =60,000 lb. per sq. in.
for C-Grade Seamless, =75,000 lb. per sq. in.

Standard Pipes

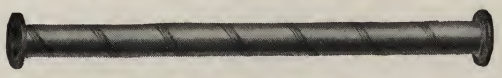
Size Inches	External Diameter Inches	Wall Thickness Inches	Ultimate Bursting Pressure: Welded & A-Grade Seamless	B-Grade Seamless	C-Grade Seamless
⅛	.405	.068	16775	20148	25185
¼	.540	.088	16296	19556	24444
⅜	.675	.091	13481	16178	20222
½	.840	.109	12976	15571	19464
¾	1.050	.113	10762	12914	16143
1	1.315	.133	10114	12137	15171
1¼	1.660	.140	8434	10120	12651
1½	1.900	.145	7632	9158	11447
2	2.375	.154	6484	7781	9726
2½	2.875	.203	7061	8473	10591
3	3.500	.216	6171	7406	9257
3½	4.000	.226	5650	6780	8475
4	4.500	.237	5267	6320	7900
4½	5.000	.247	4940	5928	7410
5	5.563	.258	4638	5565	6957
6	6.625	.280	4226	5072	6340
7	7.625	.301	3948	4737	5921
8	8.625	.277	3212	3854	4817
8	8.625	.322	3733	4480	5600
9	9.625	.342	3553	4264	5330
10	10.750	.279	2595	3114	3893
10	10.750	.307	2856	3427	4284
10	10.750	.365	3395	4074	5093
11	11.750	.375	3191	3830	4787
12	12.750	.330	2588	3106	3882
12	12.750	.375	2941	3529	4412
Extra Strong Pipes					
⅛	.405	.095	23457	28148	35185
¼	.540	.119	22037	26444	33056
⅜	.675	.126	18667	22400	28000
½	.840	.147	17500	21000	26250
¾	1.050	.154	14667	17600	22000
1	1.315	.179	13612	16335	20418
1¼	1.660	.191	11506	13807	17259
1½	1.900	.200	10526	12632	15789
2	2.375	.218	9179	11015	13768
2½	2.875	.276	9600	11520	14400
3	3.500	.300	8571	10286	12857
3½	4.000	.318	7950	9540	11925
4	4.500	.337	7489	8987	11233
4½	5.000	.355	7100	8520	10650
5	5.563	.375	6741	8089	10111
6	6.625	.432	6521	7825	9781
7	7.625	.500	6557	7869	9836
8	8.625	.500	5797	6957	8696
9	9.625	.500	5195	6234	7792
10	10.750	.500	4651	5581	6977
11	11.750	.500	4255	5106	6383
12	12.750	.500	3922	4706	5882
Double Extra Strong Pipes					
½	.840	.294	35000	42000	52500
¾	1.050	.308	29333	35200	44000
1	1.315	.358	27224	32669	40837
1¼	1.660	.382	23012	27614	34518
1½	1.900	.400	21053	25263	31579
2	2.375	.436	18358	22029	27537
2½	2.875	.552	19200	23040	28800
3	3.500	.600	17143	20571	25714
3½	4.000	.636	15900	19080	23850
4	4.500	.674	14978	17973	22467
4½	5.000	.710	14200	17040	21300
5	5.563	.750	13482	16178	20223
6	6.625	.864	13042	15650	19562
7	7.625	.875	11475	13770	17213
8	8.625	.875	10145	12174	15217

The allowable working pressure in bursting depending upon operating conditions, is determined by dividing the ultimate bursting pressure by one of the following factors of safety:

Operating Conditions	Factor of Safety
Steady, gradually increasing pressure	4
Sudden change (O to Max.) in pressure	6
Vehement pulsations	8

Taylor Forge Spiral Pipe

Riveted or Welded



For exhaust and vacuum lines, spray pond headers, industrial furnace piping, heating systems, conveying materials, brine circulation and refrigeration lines, condenser piping, water lines of all kinds, material conveying, powdered coal lines and for other services.

Reinforced by a helical seam such a pipe withstands bursting strains, limited only by the controllable gage of the metal.

Taylor Spiral Welded Pipe is welded by the shielded arc process which produces a uniformly dense weld. Bursting tests have invariably proved that the weld is the strongest part of the pipe.

Random lengths of Taylor Spiral Pipe can be easily equipped with light and strong Taylor Forge Flanges by means of simple on-the-job welding—or the pipe can be ordered with these flanges welded in place according to conditions. No metal is cut away by the process of welding the flanges and effective thickness of Taylor Spiral Pipe is approximately that of standard wrought pipe when the thickness of the iron pipe is reduced by threading.

Taylor Forged Steel Flanges are lighter than cast iron flanges. They match the diameter and drilling of standard valves and fittings.

Pipe is available asphalt coated or galvanized. The asphalt coating is applied by hot dipping and vertical draining. Galvanizing is done also by the superior hot dip, vertical draining process.

Standard lengths are 20, 30 and 40 feet, but other lengths are furnished on special orders.

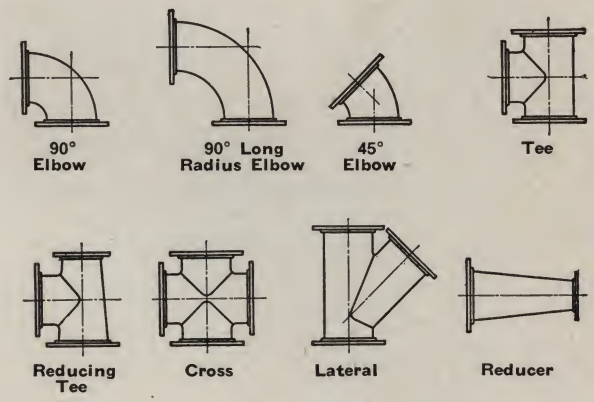
Taylor Forge Spiral Pipe

Nom. I.D. In.	†Riveted Plain End Per Ft.	†Riveted U.S.Std. Gage Thickness	†Riveted Test Pressure Lbs. per Sq. In.	‡Welded *Plain End Per Ft.	‡Welded U.S.Std. Gage Thickness	‡Welded Hydrostatic Test Press. Lbs. Per Sq. In.
3	$.18	18	600	....	..	....
4	.29	16	500	$.36	14	900
5	.36	16	400	.45	14	800
5	.45	14	550	....	..	....
6	.43	16	350	.54	14	650
6	.54	14	475	.76	12	900
6	.76	12	675	.97	10	1000
8	.57	16	275	.71	14	520
8	.71	14	350	.99	12	700
8	.99	12	500	1.27	10	900
10	.71	16	225	.89	14	400
10	.89	14	275	1.24	12	620
10	1.24	12	400	1.59	10	800
12	.84	16	175	1.05	14	320
12	1.05	14	225	1.47	12	500
12	1.47	12	325	1.89	10	640
12	1.89	10	425	2.30	8	700
14	.93	16	150	1.16	14	290
14	1.16	14	200	1.62	12	450
14	1.62	12	275	2.08	10	575
14	2.08	10	350	2.53	8	615
14	2.53	8	400	....	..	....
16	1.06	16	125	1.32	14	250
16	1.32	14	175	1.85	12	390
16	1.85	12	250	2.38	10	500
16	2.38	10	300	2.90	8	525
16	2.90	8	400	....	..	....
18	1.49	14	150	1.49	14	210
18	2.09	12	200	2.09	12	330
18	2.68	10	275	2.68	10	425
18	3.27	8	350	3.27	8	475
20	1.66	14	125	1.66	14	185
20	2.32	12	200	2.32	12	290
20	2.98	10	250	2.98	10	375
20	3.63	8	300	3.63	8	430

*Mill coated on outside only. †To 42-In. ‡To 30-In. Prices on request.

Taylor Forge Fittings for Lightweight Pipe

No. 10 Gage Thickness (.1406 Inch)



With Taylor Standard Flanges Attached

Nom. I.D. In.	90° Elbows Black Each	90° Elbows Galv. Each	90° Long Radius Elbows Black Each	90° Long Radius Elbows Galv. Each	45° Elbows Black Each	45° Elbows Galv. Each	Tees Black Each	Tees Galv. Each
3	$6.00	$6.80	.....	.....	$6.00	$6.80	$8.70	$10.90
4	8.00	9.00	.....	.....	8.00	9.00	10.10	13.00
5	9.00	10.60	.....	.....	9.00	10.60	11.80	14.60
6	10.00	11.90	$13.50	$15.90	10.00	11.90	13.00	16.00
8	13.00	15.80	18.00	21.50	13.00	15.80	17.00	20.00
10	20.00	24.00	26.00	31.00	20.00	24.00	25.00	30.00
12	24.00	29.00	33.00	39.20	24.00	29.00	29.00	35.00
14	32.00	39.00	43.00	52.00	32.00	39.00	41.00	50.00
16	44.00	54.00	55.00	70.00	44.00	54.00	71.00	86.00
18	79.00	97.00	90.00	110.00	61.00	75.00	97.00	118.00
20	90.00	108.00	100.00	125.00	70.00	85.00	108.00	130.00
22	100.00	125.00	115.00	140.00	80.00	98.00	125.00	150.00
24	120.00	145.00	135.00	160.00	90.00	110.00	142.00	175.00

With Flanges of American Standard Diameter and Drilling Attached

3	$7.00	$8.40	.....	.....	$7.00	$8.40	$10.20	$13.30
4	9.00	10.70	.....	.....	9.00	10.70	11.60	15.50
5	11.00	13.40	.....	.....	11.00	13.40	14.80	17.30
6	12.00	14.60	$15.50	$19.00	12.00	14.60	16.00	20.00
8	16.00	20.40	21.00	26.00	16.00	20.40	21.50	27.00
10	24.00	30.00	30.00	37.00	24.00	30.00	29.50	39.00
12	30.00	39.00	39.00	49.00	30.00	39.00	38.00	50.00
14	38.00	49.00	49.00	62.00	38.00	49.00	50.00	65.00
16	50.00	64.00	61.00	80.00	50.00	64.00	80.00	101.00
18	86.00	108.00	97.00	121.00	86.00	108.00	110.00	135.00
20	97.00	119.00	107.00	137.00	97.00	119.00	121.00	147.00
22	108.00	137.00	123.00	152.00	108.00	137.00	138.00	168.00
24	128.00	157.00	143.00	172.00	128.00	157.00	155.00	193.00

All fittings sizes 16-inch and smaller are made from No. 10 gage steel material. Sizes 18-inch and larger furnished of a thickness suitable for specific working requirements. Elbows, sizes 16-inch and smaller (14-inch and smaller in long radius type), are made in two halves with two longitudinal welds; sizes 18-inch and larger are of segmentally welded construction, the 90 degree elbows being made with five segments and the 45 degree elbows with three segments.

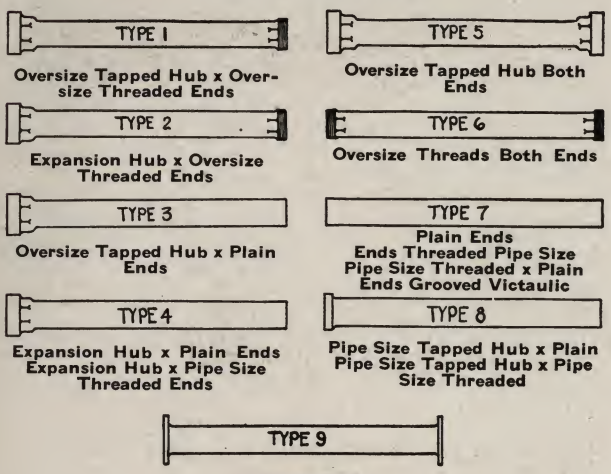
Center to face dimensions of all fittings are the same as the 125-pound American Standard for cast iron.

For reducing tees, crosses, laterals and reducers, prices upon application.

Walworth Cast Iron Threaded Pipe

Hi-Test, C.N.I. (Chrome-Nickel-Iron), Ni-Resist

General Information



Walworth Cast Iron Threaded Pipe can be supplied with pipe size and oversize threaded ends or tapped bell ends; plain ends; grooved ends for special couplings; and flanged ends.

The variations allowed below the nominal wall thickness specified in the tables will not exceed .023 inch for sizes 1¼ to 2½ inches, inclusive, and .031 inch for sizes 3 to 8 inches, inclusive.

Pipe is supplied in lengths of 5, 10, 15 and 20 feet, but may vary by one half of one per cent either plus or minus. If lengths other than multiples of 5 feet are specified, an extra charge will be made.

The weight of no single pipe will be less than nominal by more than 5%. The total weight of an order will not be more than 2% under nominal weight.

Each length of pipe, in sizes 2½ inches and smaller, is tested by a special electrical method to determine the variation in wall thickness. Any length showing variations greater than listed for its size as specified above is rejected.

I.P.S. (Iron Pipe Size)

Size In.	O.D. In.	I.D. In.	Nom. Wall Thick. In.	Threads Per Inch: Over-size	Threads Per Inch: Pipe Size	Weight, Pounds: Plain Ends Nom. per 100 Ft.	Weight, Pounds: Types 1 to 6 Incl. Bell Only Each	Weight, Pounds: Type 8 Bell Only Each
1¼	1.660	1.232	.214	11½	11½	310	5	.60
1½	1.900	1.453	.223	11½	11½	380	6½	.90
2	2.375	1.892	.241	8	11½	520	7½	1.00
2½	2.875	2.312	.281	8	8	725	10	1.35
3	3.500	2.900	.300	8	8	954	14	2.80
4	4.500	3.826	.337	8	8	1391	19	3.48
5	5.563	4.813	.375	....	8	1928	....	5.00
6	6.625	5.761	.432	8	8	2640	23	6.60
8	8.625	7.625	.500	....	8	4000	....	10.00

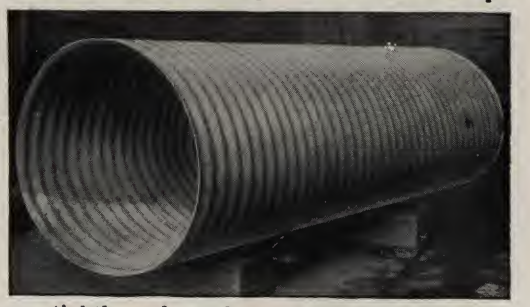
W.P.S. (Water Pipe Size)

Size In.	O.D. In.	I.D. In.	Nom. Wall Thick. In.	Types 1 to 6 Threads per Inch In.	Weight, Pounds: Plain Ends Nom. per 100 Ft.	Weight, Pounds: Types 1 to 6 Incl. Bell Only Each
1¼	1.750	1.370	.190	11½	290	4½
2	2.500	2.000	.250	8	605	8
3	3.625	3.000	.312	8	1025	15
4	4.800	4.120	.340	8	1497½	20½
6	6.900	6.160	.370	8	2355	25

Fittings, Valves, Nipples and Specials

Walworth Screw and Flanged Fittings, Nipples, Valves, and almost any type of fabricated fitting or header, can be supplied in Hi-Test Cast Iron, C.N.I. and Ni-Resist metals.

Galvanized Corrugated Culvert Pipe



Seams tightly and evenly cinched. Pipe is straight and even. Joints cannot be loosened by bending or swaying.

Diameter Inches	Area Square Feet	Weight, Pounds, per Foot — Gage No. 16	14	12	10	8
8	.349	7.2	....	....	....	....
10	.545	8.9	11.0	....	....	....
12	.785	10.4	12.9	17.9	....	....
15	1.227	12.7	15.7	21.8	....	....
18	1.767	15.3	18.8	26.1	....	....
21	2.405	17.8	22.0	30.4	38.8	....
24	3.142	20.0	24.8	34.3	43.8	53.2
30	4.909	....	30.8	42.7	54.4	66.2
36	7.069	....	36.7	51.0	64.9	78.9
42	9.621	....	42.6	59.2	75.4	91.7
48	12.566	....	48.9	67.8	86.4	105.1
54	15.904	....	55.7	77.3	98.4	119.6
60	19.635	....	....	85.5	108.8	132.4
66	23.758	....	....	93.7	119.4	145.1
72	28.274	....	....	101.9	129.8	157.9
78	33.183	....	....	.....	140.3	170.6
84	38.485	....	....	.....	150.8	183.4
96	50.265	....	....	.....	172.9	210.3
108	63.617	....	....	.....	194.7	236.8

Based on U. S. Standard Gages for sheet and plate iron and steel. Prices upon application.

Condenser Tubes

Diameter.....inches	⅝	⅝	¾	¾	⅝	¾
Stubs Gage.....	16	17	16	17	18	18
Wall Decimal...inches	.065	.058	.065	.058	.049	.049
I.D.....inches	.495	.509	.620	.634	.527	.652
Approx. Lbs. per Lin. Ft.	.422	.382	.517	.467	.328	.399

Prices upon application.

Prices also quoted for tinning condenser tubes inside and outside.

Seamless Copper Boiler Tube Ferrules

Plain Ferrule

Flanged Ferrule

These ferrules have no seams and are made of pure sheet copper. Made to exact size, annealed, and ready for use when received. It is not necessary to be continually expanding the tubes, as the ferrules keep the tubes tight. It requires less time to place the flanged type around the tube than it does the plain ferrule. The flange holds the ferrule in place against the tube sheet of the boiler. It is not necessary to first expand the ferrule.

In ordering, be sure to state inside and outside diameter and width; also thickness of copper desired, and whether with or without flange. Prices upon application.

Boiler Tubes

Seamless, Lap Welded Steel or Charcoal Iron

Manufacturing Weights
Pounds per Foot

Outside Diam. In.	Std. Min. Thickness Birmingham Wire Gage	Decimal In.	Standard Thickness	1 Extra Gage	2 Extra Gages	3 Extra Gages	4 Extra Gages
1	13	.095	1.037	1.168	1.263	1.384	1.500
1¼	13	.095	1.328	1.502	1.628	1.793	1.951
1½	13	.095	*1.619	*1.836	*1.994	*2.201	*2.402
1¾	13	.095	*1.910	*2.169	*2.360	*2.610	*2.854
2	13	.095	*2.201	*2.503	*2.726	*3.018	3.305
2¼	13	.095	2.492	*2.837	*3.092	*3.427	3.756
2½	12	.109	*3.171	*3.457	*3.835	4.207	4.665
2¾	12	.109	3.504	3.823	4.244	4.658	5.169
3	12	.109	*3.838	*4.189	*4.652	*5.110	5.674
3¼	11	.120	4.555	*5.061	5.561	6.179	6.697
3½	11	.120	*4.921	*5.469	6.012	6.683	7.247
4	10	.134	*6.286	*6.915	7.693	8.347	9.336
4½	10	.134	*7.103	*7.817	8.702	9.447	10.58
5	9	.148	8.720	9.711	10.55	11.81	12.73
5½	9	.148	*9.622	10.72	11.65	13.05	14.07
6	7	.180	12.75	14.29	15.41	16.64	17.45
6½	6	.203	15.53	16.75	18.09	18.98	23.48
7	5	.220	18.09	19.54	20.51	25.40	30.11
7½	5	.220	19.43	21.00	22.04	27.31	32.40
8	5	.220	20.77	22.45	23.56	29.22	34.69
8½	4	.238	23.90	25.09	31.13	36.98	.....
9	4	.238	25.35	26.62	33.04	39.27	.....
9½	¼″	.250	28.14	34.95	41.56	.....	.....
10	¼″	.250	29.67	36.87	43.85	.....	.....

Outside Diam. In.	5 Extra Gages	6 Extra Gages	7 Extra Gages	8 Extra Gages	9 Extra Gages	10 Extra Gages	11 Extra Gages	12 Extra Gages
1	1.637	1.747	1.903	.....	.....	.....	.....	.....
1¼	2.142	2.297	2.522	2.678	.....	2.945	.....	.....
1½	2.646	2.847	3.142	3.348	.....	3.708	4.366	4.907
1¾	3.151	3.397	3.761	4.018	.....	4.472	5.322	6.052
2	3.656	3.947	4.381	4.689	.....	5.235	6.278	7.198
2¼	4.160	4.497	5.000	5.359	.....	5.999	7.234	8.343
2½	5.047	5.620	6.029	.....	6.763	8.190	9.489	.....
2¾	5.597	6.239	6.699	.....	7.526	9.146	10.63	.....
3	6.147	6.858	7.369	.....	8.290	10.10	11.78	.....
3¼	7.478	8.039	.....	9.053	11.06	12.93	.....	.....
3½	8.097	8.710	.....	9.817	12.01	14.07	.....	.....
4	10.05	10.83	11.34	13.92	16.36	.....	.....	.....
4½	11.39	12.28	12.87	15.84	18.65	.....	.....	.....
5	13.73	14.40	17.75	20.94	.....	.....	.....	.....
5½	15.19	15.93	19.66	23.23	.....	.....	.....	.....
6	21.57	25.52	.....	.....	.....	.....	.....	.....
6½	27.82	.....	.....	.....	.....	.....	.....	.....

*Locomotive tubes.

Under latest revision of A.S.T.M. specification, serial designation A-83 and A.S.M.E. Boiler Code, the gage ordered is the lightest that may be shipped. As it is impossible to manufacture to an exact thickness or weight, the necessary variation will be represented by heavier wall and overweight.

Prices on Application

Stainless Steel Pipe and Tubes

This highly specialized modern tubular material can be used in food handling, in the dairy industry, in pulp and paper making, oil refining, and the general chemical industry, automobile and aeronautic fields, in architecture, in the making of home appliances, and for a variety of other manufacturing and industrial purposes.

It may be used continuously at temperatures up to 1550°F. under oxidizing conditions.

Imperial Bundy Steel Tubing

A soft temper steel tubing made by a copper brazing process from copper coated, inside and outside, cold rolled strip steel. Has a special tinned outside coating also.

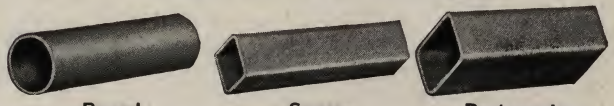
Suited for gas and oil lines, vacuum lines and hydraulic brake lines on cars, trucks, buses, tractors. Also used for many refrigeration and air conditioning applications. Usable with such refrigerants as freon, butane, methyl chloride (not with ammonia). Not dehydrated. Well adapted for oil and air lines, for connecting up oil burners, etc.

Can be cut, bent, flared, coiled, soldered, brazed and welded. Can be used with Imperial flare, compression, Hi-Duty, inverted flare and flex fittings. Is somewhat less ductile than copper tubing.

Furnished in 25 foot coils only.

O.D.....inches	⅛	3/16	¼	5/16	⅜
Per Single Coil.....	**$1.61**	**1.65**	**1.76**	**1.97**	**2.16**
Wall Thickness.....in.	0.020	0.020	0.028	0.028	0.028
Ult. Bursting Str. .....lb. per sq. in.	17,800	11,860	12,500	10,500	8,700
Weight per Coil.....lb.	.55	.9	1.58	1.98	2.63

Seamless Steel Tubing



Round **Square** **Rectangular**

Seamless Steel Tubing can be furnished in random lengths of 5 feet or over.

Round Tubing can be furnished in diameters from ¼ to 20 inches, thickness of wall from 20 gage (.035 inch) to 1½ inches. It is available in several hundred different weights per foot.

Oval, Square, Rectangular, Hexagonal, Etc. are also available in a wide variety of sizes and thicknesses of wall. Various grades of steel and different anneals can be furnished.

Please send us your specifications. Prices will be furnished promptly.

Pipe Cutting & Threading

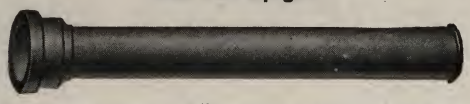
We are prepared to cut and thread pipe to measurement or sketch.

Cast Iron Pit Cast Pipe

For Water or Other Liquids

Approved by American Standards Association, December, 1939

Bell and Spigot



These weights are for pipe laid without blocks, on flat bottom trench, with tamped backfill, under 5 feet of cover.

Standard Thicknesses and Weights

	Class 50 — 50-Lb. Press. 115 Feet Head		Class 100 — 100-Lb. Press 231 Feet Head		Class 150 — 150-Lb. Press 346 Feet Head		Class 200 — 200-Lb. Press. 462 Feet Head	
Size In.	Thick. In.	*Wt. Lb. per 12-Ft. Lgth.	Thick. In.	*Wt. Lb. per 12-Ft. Lgth.	Thick. In.	*Wt. Lb. per 12-Ft. Lgth.	Thick. In.	*Wt. Lb. per 12-Ft. Lgth.
3	.37	170	.37	170	.37	170	.37	170
4	.40	230	.40	230	.40	230	.40	230
6	.43	360	.43	360	.43	360	.43	360
8	.46	515	.46	515	.46	515	.46	515
10	.50	685	.50	685	.54	730	.58	775
12	.54	880	.54	880	.58	935	.63	1005
14	.54	1025	.58	1095	.63	1210	.68	1295
16	.58	1265	.63	1360	.68	1500	.79	1710
18	.63	1535	.68	1640	.73	1805	.85	2065
20	.66	1785	.71	1905	.83	2265	.90	2430
24	.74	2385	.80	2555	.93	3030	1.00	3230
30	.87	3460	.94	3735	1.10	4405	1.19	4835
36	.97	4610	1.05	5050	1.22	5895	1.43	6940
42	1.07	5970	1.25	6950	1.35	7655	1.58	8990
48	1.18	7510	1.37	8715	1.48	9595	1.73	11280
54	1.30	9325	1.51	10875	1.63	11965	1.90	14025
60	1.39	11070	1.62	12925	1.89	15250	2.20	17860

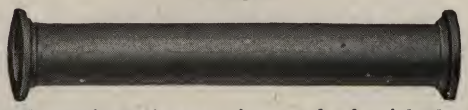
	Class 250 — 250-Lb. Press 577 Feet Head		Class 300 — 300-Lb. Press. 693 Feet Head		Class 350 — 350-Lb. Press. 808 Feet Head	
Size In.	Thick. In.	*Wt. Lb. per 12-Ft. Lgth.	Thick. In.	*Wt. Lb. per 12-Ft. Lgth.	Thick. In.	*Wt. Lb. per 12-Ft. Lgth.
3	.37	170	.37	170	.37	170
4	.40	230	.40	230	.40	230
6	.43	360	.46	380	.50	410
8	.50	550	.54	590	.58	645
10	.63	865	.68	925	.73	980
12	.68	1105	.73	1175	.79	1260
14	.79	1480	.85	1580	.92	1780
16	.85	1825	.92	1955	.99	2180
18	.92	2210	.99	2360	1.07	2650
20	.97	2600	1.05	2785	1.22	3325
24	1.08	3460	1.26	4155	1.36	4440
30	1.39	5545	1.50	6135	1.62	6695
36	1.54	7405	1.79	8735	1.93	9530
42	1.71	9635	....	....	....	....
48	2.02	12925	....	....	....	....
54	2.21	16005	....	....	....	....
60	2.38	19135	....	....	....	....

*Including bell and spigot bead. Calculated weight of pipe rounded off to nearest 5 pounds.

Approximate Weights of Lead and Hemp Required for Joints

Pipe In.	Wt., Lb. Lead	Wt., Lb. Hemp	Pipe In.	Wt., Lb. Lead	Wt., Lb. Hemp	Pipe In.	Wt., Lb. Lead	Wt., Lb. Hemp
3	6	.18	**14**	22	.81	**36**	64.75	3
4	7.5	.21	**16**	30	.94	**42**	75.25	3.62
6	10.25	.31	**18**	33.8	1	**48**	85.5	4.37
8	13.25	.44	**20**	37	1.25	**54**	97.6	6.25
10	16	.53	**24**	44	1.50	**60**	108.3	8.25
12	19	.61	**30**	54.25	2.06	..	.....	....

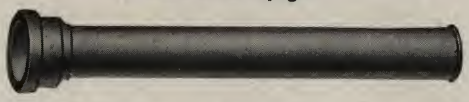
Flanged



Flanged cast iron pit cast pipe can be furnished. Advise us of your requirements.

Cast Iron Water Pipe

Bell and Spigot



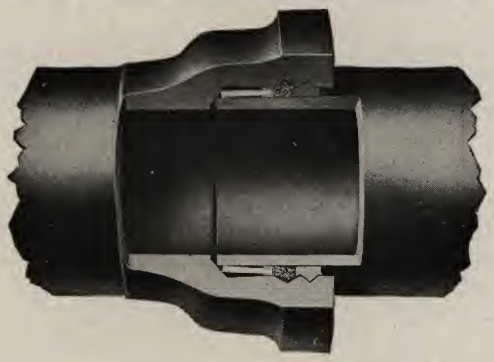
Standard Thickness and Weights of Cast Iron Pipe

	Class A Gas		Class B Standard		Class C Medium Heavy		Class D Extra Heavy	
	100-Ft. Head 43 Lbs. Press.		200-Ft. Head 86 Lbs. Press.		300-Ft. Head 130 Lbs. Press.		400-Ft. Head 173 Lbs. Press.	
Nom. I.D. In.	Thickness In.	Wt. Lbs. per Ft.	Thickness In.	Wt. Lbs. per Ft.	Thickness In.	Wt. Lbs. per Ft.	Thickness In.	Wt. Lbs. per Ft.
3	.38	13.9	.42	15.4	....	.....	....	.....
4	.42	20	.45	21.7	.48	23.3	.52	25
6	.44	30.8	.48	33.3	.51	35.8	.55	38.3
8	.46	42.9	.51	47.5	.56	52.1	.60	55.8
10	.50	57.1	.57	63.8	.62	70.8	.68	76.7
12	.54	72.5	.62	82.1	.68	91.7	.75	100
14	.57	89.6	.66	102.5	.74	116.7	.82	129.2
16	.60	108.3	.70	125	.80	143.8	.89	158.3
18	.64	129.2	.75	150	.87	175	.96	191.7
20	.67	150	.80	175	.92	208.3	1.03	229.2
24	.76	204.2	.89	233.3	1.04	279.2	1.16	306.7
30	.88	291.7	1.03	333.3	1.20	400	1.37	450
36	.99	391.7	1.15	454.2	1.36	545.8	1.58	625
42	1.10	512.5	1.28	591.7	1.54	716.7	1.78	825
48	1.26	666.7	1.42	750	1.71	908.3	1.96	1050
54	1.35	800	1.55	933.3	1.90	1141.7	2.23	1341.7
60	1.39	916.7	1.67	1104.2	2	1341.7	2.38	1583.3
72	1.62	1283.4	1.95	1545.8	2.39	1904.2	....	.....
84	1.72	1633.4	2.22	2104.2	....	.....	....	.....

All lengths to lay 12 feet. All weights are approximate; those per foot include allowance for bell. All pipe is tested by water pressure. Turned and bored pipe made to order only.

Two-inch pipe and fittings also furnished.

American Bell-and-Spigot Prepared Joints



Cast Iron Pipe Cut Open to Illustrate Position of Joint

This product is called prepared joint because it is made at the factory in the bell of each pipe and needs only calking in the usual way when placed in the trench. A lead and hemp joint for bell and spigot cast iron pipe, conveying water, other liquids and gas. As prepared joint is factory made, to complete a joint in the trench it is necessary only to insert a plain end into a bell and calk the lead.

Prepared joint pipe comes in 16-foot lengths, in diameters of 4, 6, 8, 10 and 12 inches.

Simplifies pipe line construction. The inside shoulder of the bell of this pipe is beveled. When the joint is first calked, the iron wedges slide down this beveled shoulder, or incline, until they engage the spigot end of the next pipe all around. In case of deflection after being laid, extreme end of pipe goes down and carries with it at bottom the wedges which are brought forward as they move along inclined shoulder, forcing hemp and lead into further compression and automatically tightening joint as deflection takes place. Inside of bell of prepared joint pipe has 2 lead grooves.

Prices and further information upon application.

Specials for Cast Iron Pipe

Class D

90° Quarter Bends

Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
4	82	16	750
6	130	18	888
8	200	20	1070
10	278	24	1656
12	366	30	2836
14	504	36	4820

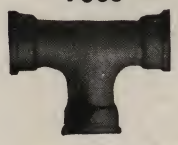
45° Eighth Bends

Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
4	66	12	265	20	964
6	105	14	442	24	1515
8	150	16	558	30	2291
10	202	18	663	36	4012

22½° Sixteenth Bends

4	66	10	202	16	484	24	1372
6	105	12	265	18	574	30	2080
8	150	14	382	20	858	36	4012

Tees



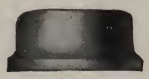
Size, In.	Wt., Lbs.	Size, In.	Wt., Lbs.	Size, In.	Wt., Lbs.
4x 4x 4	128	10x10x 6	352	16x16x16	969
6x 6x 6	200	10x10x 4	338	16x16x12	861
6x 6x 4	183	12x12x12	512	20x20x20	1438
8x 8x 8	294	12x12x10	491	24x24x24	2113
8x 8x 6	270	12x12x 8	474	30x30x30	3660
8x 8x 4	255	12x12x 6	458	36x36x36	5567
10x10x10	395	12x12x 4	445	48x48x48	....
10x10x 8	371	14x14x14	724	.....	....

Crosses

Size, In.	Wt., Lbs.	Size, In.	Wt., Lbs.	Size, In.	Wt., Lbs.
4x 4x 4x 4	166	10x10x 6x 6	406	16x16x16x16	1259
6x 6x 6x 6	257	10x10x 4x 4	377	18x18x18x18	1454
6x 6x 4x 4	221	12x12x12x12	623	20x20x20x20	1828
8x 8x 8x 8	372	12x12x10x10	577	24x24x24x24	2694
8x 8x 6x 6	325	12x12x 8x 8	545	30x30x30x30	4609
8x 8x 4x 4	294	12x12x 6x 6	512	36x36x36x36	6857
10x10x10x10	493	12x12x 4x 4	486	48x48x48x48	....
10x10x 8x 8	443	14x14x14x14	963	.....	....

Plugs and Caps

Plug



Cap

Size In.	Wt., Lbs. Plug	Wt., Lbs. Cap	Size In.	Wt., Lbs. Plug	Wt., Lbs. Cap	Size In.	Wt., Lbs. Plug	Wt., Lbs. Cap
4	8	26	14	65	149	30	723	704
6	14	40	16	96	198	36	1050	1084
8	24	59	18	121	242	48	2047	2341
10	38	81	20	156	308	54	2733	3009
12	50	104	24	472	442	60	3397	3687

Sleeves

Size In.	Lgth. In.	Wt. Lbs.	Size In.	Lgth. In.	Wt. Lbs.	Size In.	Lgth. In.	Wt. Lbs.
4	15	61	14	18	280	30	24	1262
6	15	87	16	24	443	36	24	1772
8	15	119	18	24	518	48	24	2879
10	18	176	20	24	625	54	24	3571
12	18	223	24	24	821	60	24	4231

Specials for Cast Iron Pipe

Class D

Y Branches

Y Branch

Size, In.	Wt., Lbs.
4x 4	103
6x 6	181
8x 8	291
10x10	434
12x12	632
14x14	985
16x16	1413
18x18	1737
20x20	2199
24x24	3599

Reducer

Increaser

Reducers

Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
6x 4	97	12x 6	202	16x10	364	20x12	576
8x 6	143	12x 4	179	18x16	569	24x20	987
8x 4	119	14x12	360	18x14	502	24x18	901
10x 8	198	14x10	320	18x12	446	24x16	838
10x 6	169	14x 8	288	18x10	405	24x14	764
10x 4	146	14x 6	256	20x18	776	30x24	1398
12x10	261	16x14	461	20x16	711	36x30	2264
12x 8	231	16x12	405	20x14	638	.....	....

Increasers

4x 6	104	6x 8	150	8x10	201	12x14	378
4x 8	132	6x10	180	8x12	240	.....	....
4x10	162	6x12	218	10x12	267	.....	....

Split Tees

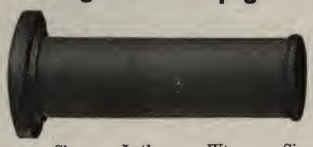
With any size outlet.

Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
3	60	6	115	10	245
4	103	8	165	12	275

Split Sleeves

3	50	6	101	10	225
4	91	8	151	12	250

Flanges and Spigots



Size In.	Lgth. In.	Wt. Lbs.	Size In.	Lgth. In.	Wt. Lbs.	Size In.	Lgth. In.	Wt. Lbs.
3	16	24	10	18	140	18	20	340
4	16	38	12	18	173	20	20	425
6	16	60	14	18	220	24	24	635
8	16	90	16	20	255	..	..	...

Flanges and Bells

Size In.	Lgth. In.	Wt. Lbs.	Size In.	Lgth. In.	Wt. Lbs.
3	4	24	14	6	220
4	4	38	16	6	275
6	4	60	18	6	325
8	4	90	20	6	395
10	6	140	24	6	520
12	6	173	..	.	...

Flanges

Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
3	10	10	45	18	117
4	15	12	59	20	153
6	20	14	80	24	210
8	32	16	105	..	...

Dresser No-Thread Compression Fittings for Steel Pipe

Dresser fittings join pipe without threading, making a permanent, oil-tight, gas-tight, flexible pipe joint. They are principally for factory piping, pumps and machinery, meter connections, mechanical equipment, etc.

Made of malleable iron that conforms to specifications for 150-pound malleable fittings and when properly installed may be safely recommended for working pressures up to and including 150 pounds per square inch.

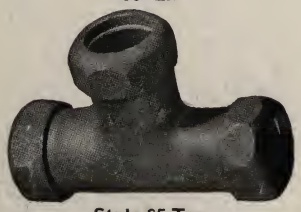
These standard fittings come completely assembled. Just loosen the follower nuts (do not take fitting apart), slip in the plain-end pipe and tighten the follower nuts with a wrench.

Style 65 Coupling

Style 65, Long Coupling

45° Ell

90° Ell



Style 65 Tee

Style 65A Threaded Branch Tee

Female Adapter

Male Adapter

Pipe Caps

Nom. I.D. Pipe Inches	O.D. Pipe Inches	Fitting Complete — Black Each	Fitting Complete — Galv Each	**Gaskets Each	¶Body (Middle Ring) Length Inches	Approx. Ship. Wt. Lb. per 100
		***†Style 65 Couplings (Standard Length Body)**				
3/8	.675	$.90	$.95	$.13	1 13/32	29
1/2	.840	.97	1.01	.14 1/2	1 9/16	40
3/4	1.050	1.03	1.08	.15 1/2	1 3/4	57
1	1.315	1.17	1.25	.17 1/2	2	80
1 1/4	1.660	1.43	1.50	.18 1/2	2 1/4	124
1 1/2	1.900	1.67	1.80	.20	2 7/16	157
2	2.375	1.91	2.16	.26 1/2	2 3/4	252
		***†Style 65 Couplings (Extra Length Body)**				
1/2	.840	$1.01	$1.10	$.14 1/2	3 1/2	60
3/4	1.050	1.10	1.17	.15 1/2	3 3/4	86
1	1.315	1.19	1.34	.17 1/2	4	118
1 1/4	1.660	1.45	1.63	.18 1/2	4 1/4	175
1 1/2	1.900	1.74	1.94	.20	4 1/2	225
2	2.375	2.11	2.35	.26 1/2	4 3/4	342
		Style 65 45° Ells				
1/2	.840	$1.01	$1.08	$.14 1/2	...	58
3/4	1.050	1.08	1.12	.15 1/2	...	81
1	1.315	1.30	1.39	.17 1/2	...	119
1 1/4	1.660	1.54	1.67	.18 1/2	...	178
1 1/2	1.900	1.85	2.07	.20	...	232
2	2.375	2.40	2.68	.26 1/2	...	357
		Style 65 90° Ells				
1/2	.840	$1.03	$1.08	$.14 1/2	...	62
3/4	1.050	1.10	1.17	.15 1/2	...	85
1	1.315	1.32	1.43	.17 1/2	...	127
1 1/4	1.660	1.63	1.74	.18 1/2	...	191
1 1/2	1.900	1.91	2.18	.20	...	251
2	2.375	2.49	2.84	.26 1/2	...	411
		†Style 65 Tees				
1/2	.840	$1.43	$1.50	$.14 1/2	...	89
3/4	1.050	1.56	1.72	.15 1/2	...	122
1	1.315	1.85	2.00	.17 1/2	...	180
1 1/4	1.660	2.33	2.55	.18 1/2	...	282
1 1/2	1.900	2.73	3.08	.20	...	362
2	2.375	3.83	4.27	.26 1/2	...	579
		§Style 65A Threaded Branch Tees				
3/4x 3/4x1/4	1.050	$1.21	$1.28	$.15 1/2	...	91
3/4x 3/4x3/8	1.050	1.21	1.28	.15 1/2	...	91
3/4x 3/4x1/2	1.050	1.21	1.28	.15 1/2	...	91
1 x1 x1/2	1.315	1.30	1.47	.17 1/2	...	124
1 1/4x1 1/4x1/2	1.660	1.61	1.78	.18 1/2	...	184
1 1/4x1 1/4x3/4	1.660	1.61	1.78	.18 1/2	...	184
		Style 65 Female Adapters				
3/4	1.050	$.88	$.95	$.15 1/2	...	43
1	1.315	1.03	1.10	.17 1/2	...	59
1 1/4	1.660	1.25	1.36	.18 1/2	...	88
1 1/2	1.900	1.43	1.56	.20	...	113
2	2.375	1.69	1.87	.26 1/2	...	171
		Style 65 Male Adapters				
3/4	1.050	$.81	$.88	$.15 1/2	...	45
1	1.315	.97	1.03	.17 1/2	...	62
1 1/4	1.660	1.17	1.23	.18 1/2	...	93
1 1/2	1.900	1.30	1.43	.20	...	119
2	2.375	1.54	1.72	.26 1/2	...	180
		Style 65 Pipe Caps				
1 1/4	1.660	$1.30	$1.39	$.18 1/2	...	124
1 1/2	1.900	1.45	1.63	.20	...	157
2	2.375	1.94	2.18	.26 1/2	...	252

SIZES 3/8-inch I.D. available at present only in Style 65 (standard-length) couplings. If demand warrants, this size will be added later for other fittings listed above.

*BLACK FITTINGS furnished from stock, are supplied as standard on all orders. If specified, galvanized fittings also carried in stock can be substituted at prices shown above.

†OUTLETS of each fitting are the same size. No fittings shown above are reducing type.

§Outlets have female pipe threads for steel pipe.

¶PIPE STOPS can be removed from bodies of Style 65 Couplings at no extra cost for all sizes. NOTE: Style 65 Long Couplings are regularly supplied without stops in all sizes.

**Including gasket retainer cups. GASKETS supplied on all orders are armored type. Plain gaskets can be substituted if specified; prices on application.

Style 38 Dresser Regular Steel Couplings

For Steel Pipe in Sizes ⅜-Inch I.D. to 24-Inch O.D., Inclusive

Rubber-gasketed. Makes a permanently tight, flexible connection between sections of plain end pipe.

For high and low pressures, on gas, water, air, oil, and sewage lines. Coupling is made up of middle ring, two followers, two rubber compound gaskets, and a number of bolts. All metal parts are steel. Special sizes are not shown in table, but can be supplied. Pipe stops (center beads) can be removed from middle rings at slight additional cost.

Middle rings thicker or longer than those shown can be supplied in certain sizes for special conditions. For sizes ¾ to 2 inches I.D. inclusive, middle rings 3½ inches long can be furnished.

Black steel bolts furnished as standard. Special bolts can be substituted at additional cost, when specified.

Gaskets are supplied in accordance with service (gas, water, oil, etc.). Specify service when ordering. Regularly furnished with standard Plain Grade 27 gaskets.

*Followers made from special-section bar steel. Other followers are pressed from steel plate.

Gaskets: †extra heavy (½x1⅛-inch section) if ordered; ‡special extra heavy (⅝x1 3/16-inch section) if ordered.

Nominal Pipe Size Inches	O.D. Pipe Inches	Thickness and Length of Middle Ring Inches	Thickness Follower Inches	No. Diameter and Length Bolts Inches	Dimensions Gasket Section Inches	Approximate Shipping Weight Pounds	With Plain Grade 27 Gaskets Each	With Armored Grade 27 or Duck-Tipped Grade 27 Gaskets Each	With Lead-Tipped Grade 27 or Plain Grade 29 Gaskets Each
⅜ I.D.	.675	.120x3½	3/16	2—⅜x 5	11/32x ⅝	2	$1.01	$1.14	$1.39
½ I.D.	.840	.120x3½	3/16	2—⅜x 5	9/32x 9/16	2	1.01	1.14	1.39
¾ I.D.	1.050	.120x5	3/16	2—½x 6¾	9/32x 9/16	3	1.21	1.41	1.65
1 I.D.	1.315	.134x5	3/16	2—½x 6¾	9/32x 9/16	4	1.23	1.43	1.78
1¼ I.D.	1.660	.140x5	3/16	2—½x 6¾	9/32x 9/16	4	1.32	1.58	2.11
1½ I.D.	1.900	.148x5	3/16	2—½x 6¾	11/32x ⅝	5	1.52	1.85	2.33
2 O.D.	2.000	.148x5	3/16	2—½x 6¾	11/32x ⅝	5	1.63	1.96	2.46
2 I.D.	2.375	.154x5	¼	3—⅝x 8	½x 29/32	10	2.44	2.70	3.21
2½ I.D.	2.875	.203x5	¼	3—⅝x 8	½x 29/32	13	2.82	3.08	3.67
2¾ Cas.	3.000	.203x5	¼	3—⅝x 8	½x 29/32	13	2.82	3.12	3.76
3 I.D.	3.500	¼x5	¼	4—⅝x 8	½x 29/32	15	3.21	3.59	4.33
3½ I.D.	4.000	¼x5	¼	4—⅝x 8	½x 29/32	17	3.43	3.85	4.55
4 I.D.	4.500	¼x5	¼	4—⅝x 8	½x 29/32	19	3.72	4.14	4.86
4½ I.D.	5.000	¼x5	¼	4—⅝x 8	½x 29/32	20	4.03	4.44	5.32
5 Cas.	5.250	¼x5	¼	4—⅝x 8	½x 29/32	20	4.22	4.70	5.62
5 3/16 Cas.	5.500	¼x5	¼	4—⅝x 8	½x 29/32	20	4.47	4.98	5.86
5 3/16 Cas.	5.500	¼x7	¼	4—⅝x10	½x 29/32	23	5.02	5.53	6.41
5 I.D.	5.563	¼x5	¼	4—⅝x 8	½x 29/32	20	4.47	4.98	5.86
5 I.D.	5.563	¼x7	¼	4—⅝x10	½x 29/32	23	5.02	5.53	6.41
5⅝ Cas.	6.000	¼x5	¼	6—⅝x 8	†½x1	24	5.08	5.47	6.24
5⅝ Cas.	6.000	¼x7	¼	6—⅝x10	†½x1	28	5.54	5.93	6.70
6 I.D.	6.625	¼x5	¼	6—⅝x 8	†½x1	25	5.35	5.81	6.76
6 I.D.	6.625	¼x7	¼	6—⅝x10	†½x1	29	5.83	6.29	7.24
6⅝ Cas.	7.000	¼x5	¼	6—⅝x 8	†½x1	27	5.57	6.03	7.24
6⅝ Cas.	7.000	¼x7	¼	6—⅝x10	†½x1	31	6.05	6.51	7.72
7⅝ Cas.	8.000	¼x5	¼	6—⅝x 8	†½x1	30	6.12	6.65	7.90
7⅝ Cas.	8.000	¼x7	¼	6—⅝x10	†½x1	35	6.64	7.17	8.42
8 I.D.	8.625	¼x5	¼	6—⅝x 8	†½x1	31	6.36	6.93	8.30
8 I.D.	8.625	¼x7	¼	6—⅝x10	†½x1	36	6.89	7.46	8.83
8 I.D.	8.625	5/16x5	5/16	6—⅝x 8½	½x1⅛	36	7.57	8.32	9.75
8 I.D.	8.625	5/16x7	5/16	6—⅝x10½	½x1⅛	42	8.18	8.93	10.36
9⅝ Cas.	10.000	¼x5	¼	8—⅝x 8	†½x1	38	7.41	7.96	9.15
9⅝ Cas.	10.000	¼x7	¼	8—⅝x10	†½x1	44	8.05	8.60	9.79
10 I.D.	10.750	¼x5	¼	8—⅝x 8	†½x1	41	7.79	8.34	9.48
10 I.D.	10.750	¼x7	¼	8—⅝x10	†½x1	47	8.45	9.00	10.14
10 I.D.	10.750	5/16x5	5/16	8—⅝x 8½	½x1⅛	48	9.09	9.64	11.04
10 I.D.	10.750	5/16x7	5/16	8—⅝x10½	½x1⅛	57	9.83	10.38	11.78
11⅝ Cas.	12.000	¼x5	¼	8—⅝x 8	†½x1	44	8.62	9.21	10.80
11⅝ Cas.	12.000	¼x7	¼	8—⅝x10	†½x1	51	9.31	9.90	11.49
12 I.D.	12.750	¼x5	¼	8—⅝x 8	†½x1	47	9.15	9.74	11.22
12 I.D.	12.750	¼x7	¼	8—⅝x10	†½x1	54	9.88	10.47	11.95
12 I.D.	12.750	5/16x5	5/16	8—⅝x 8½	½x1⅛	57	10.67	11.36	12.90
12 I.D.	12.750	5/16x7	5/16	8—⅝x10½	‡½x1⅛	65	11.51	12.20	13.74
14 O.D.	14.000	¼x5	¼	8—⅝x 8½	½x1⅛	51	10.58	11.49	13.44
14 O.D.	14.000	¼x7	¼	8—⅝x10½	½x1⅛	60	11.37	12.28	14.23
14 O.D.	14.000	5/16x5	5/16	8—⅝x 8½	½x1⅛	62	11.92	12.83	14.78
14 O.D.	14.000	5/16x7	5/16	8—⅝x10½	‡½x1⅛	71	12.67	13.58	15.53
16 O.D.	16.000	¼x7	¼	10—⅝x10½	½x1⅛	70	12.80	13.90	15.75
16 O.D.	16.000	5/16x7	5/16	10—⅝x10½	‡½x1⅛	80	14.21	15.31	17.16
16 O.D.	16.000	⅜x7	11/32	10—⅝x10½	⅝x1 3/16	98	17.09	18.41	20.68
18 O.D.	18.000	¼x7	¼	10—⅝x10½	½x1⅛	75	14.45	15.69	18.46
18 O.D.	18.000	5/16x7	5/16	10—⅝x10½	‡½x1⅛	91	16.02	17.26	20.03
18 O.D.	18.000	⅜x7	11/32	10—⅝x10½	⅝x1 3/16	111	18.59	20.13	22.48
20 O.D.	20.000	¼x7	¼	12—⅝x10½	½x1⅛	86	16.65	18.06	20.85
20 O.D.	20.000	5/16x7	5/16	12—⅝x10½	‡½x1⅛	104	18.39	19.80	22.59
20 O.D.	20.000	⅜x7	11/32	12—⅝x10½	⅝x1 3/16	122	20.99	22.71	25.99
22 O.D.	22.000	¼x7	¼*	14—⅝x10	½x1 3/16	98	20.44	21.98	26.01
22 O.D.	22.000	5/16x7	5/16	14—⅝x10½	⅝x1 3/16	121	23.91	25.82	29.39
22 O.D.	22.000	⅜x7	11/32	14—⅝x10½	⅝x1 3/16	138	25.74	27.65	31.22
24 O.D.	24.000	¼x7	¼*	14—⅝x10	½x1 3/16	105	24.22	25.89	30.32
24 O.D.	24.000	5/16x7	5/16	14—⅝x10½	⅝x1 3/16	137	28.62	30.87	34.37
24 O.D.	24.000	⅜x7	11/32	14—⅝x10½	⅝x1 3/16	156	30.27	32.52	36.02

Style 38 Dresser Steel Pipe Couplings

Pipe stops (center beads) can be removed from middle rings at slight additional cost.

Black steel bolts are furnished as standard. Galvanized, cadmium plated, or other special bolts can be substituted at additional cost if specified.

Gaskets are supplied in accordance with the service (gas, water, oil, etc.). Specify service when ordering. Regularly furnished with standard Plain Grade 27 gaskets. If different gaskets are desired, specify.

For Cast Iron Pipe 2 to 72 Inches, Inclusive

Nominal Pipe Size Inches	*†Class A.W.W.A.	O.D. Pipe Inches	Thickness and Length of Middle Ring Inches	Thickness Follower Inches	No. Diameter and Length Bolts Inches	Dimension Gasket Section Inches	Approximate Shipping Weight Pounds	With Plain Grade 27 Gaskets Each	With Armored Grade 27 or Duck-Tipped Grade 27 Gaskets Each	With Lead-Tipped Grade 27 or Pl. Grade 29 Gaskets Each
2 C.I.P.	.....	2.50	.154x 5	1/4	3—5/8x 8	1/2x 29/32	12	$2.64	$2.91	$3.52
3 C.I.P.	A	3.80	1/4x 5	1/4	4—5/8x 8	1/2x 29/32	17	3.30	3.72	4.42
3 C.I.P.	B-C-D	3.96	1/4x 5	1/4	4—5/8x 8	1/2x 29/32	17	3.43	3.85	4.55
4 C.I.P.	A*	4.80	5/16x 5	1/4	4—5/8x 8	1/2x 29/32	22	4.20	4.66	5.65
4 C.I.P.	B-C-D	5.00	5/16x 5	1/4	4—5/8x 8	1/2x 29/32	23	4.47	4.88	5.76
6 C.I.P.	A*	6.90	5/16x 5	5/16	6—5/8x 8	1/2x1	30	6.25	6.66	7.68
6 C.I.P.	B-C-D	7.10	5/16x 5	5/16	6—5/8x 8	1/2x1	33	6.40	6.86	8.07
8 C.I.P.	A*-B	9.05	5/16x 5	5/16	6—5/8x 8	1/2x1	40	7.83	8.41	9.81
8 C.I.P.	C-D	9.30	5/16x 5	5/16	6—5/8x 8	1/2x1	41	8.10	8.82	10.06
10 C.I.P.	A*-B	11.10	5/16x 7	5/16	8—5/8x10 1/2	5/8x1 1/8	60	11.00	11.79	13.06
10 C.I.P.	C-D	11.40	5/16x 7	5/16	8—5/8x10 1/2	5/8x1 1/8	62	11.37	12.19	13.48
12 C.I.P.	A*-B	13.20	3/8x 7	11/32	8—5/8x10 1/2	5/8x1 1/8	84	14.52	15.60	17.34
12 C.I.P.	C-D	13.50	3/8x 7	11/32	8—5/8x10 1/2	5/8x1 1/8	86	14.89	16.10	18.10
14 C.I.P.	A-B	15.30	3/8x 7	11/32	10—5/8x10 1/2	5/8x1 1/8	98	17.12	18.02	20.39
14 C.I.P.	C-D	15.65	3/8x 7	3/8	10—5/8x10 1/2	5/8x1 1/8	102	17.51	18.57	21.40
16 C.I.P.	A*-B	17.40	3/8x 7	11/32	10—5/8x10 1/2	5/8x1 1/8	108	19.23	20.59	22.71
16 C.I.P.	C-D	17.80	3/8x 7	3/8	10—5/8x10 1/2	5/8x1 1/8	111	19.80	21.34	24.09
18 C.I.P.	A-B	19.50	3/8x 7	3/8	12—5/8x10 1/2	5/8x1 1/8	122	27.83	29.41	32.08
18 C.I.P.	C-D	19.92	3/8x 7	3/8	12—5/8x10 1/2	5/8x1 1/8	124	28.64	30.36	33.72
20 C.I.P.	A*-B	21.60	3/8x 7	11/32	12—5/8x10 1/2	5/8x1 1/8	138	30.16	31.94	34.85
20 C.I.P.	C-D	22.06	3/8x 7	11/32	14—5/8x10 1/2	5/8x1 1/8	141	31.22	33.13	36.70
24 C.I.P.	A*-B	25.80	3/8x 7	3/8	15—5/8x10 1/2	5/8x1 1/4	160	35.13	37.09	42.13
24 C.I.P.	C-D	26.32	3/8x 7	3/8	15—5/8x10 1/2	5/8x1 1/4	163	35.90	37.88	43.05
30 C.I.P.	A*†	31.74	3/8x 7	3/8	18—5/8x11	5/8x1 5/8	200	47.48	51.99	56.83
30 C.I.P.	A*†	31.74	1/2x 8	3/8	18—5/8x12	5/8x1 5/8	238	54.93	59.44	64.28
30 C.I.P.	A*†	31.74	3/8x10	3/8	18—5/8x14	5/8x1 5/8	234	56.65	61.16	66.00
30 C.I.P.	A*†	31.74	1/2x10	3/8	18—5/8x14	5/8x1 5/8	281	62.30	66.81	71.65
36 C.I.P.	A*†	37.96	3/8x10	3/8	22—3/4x14	5/8x1 5/8	294	63.27	68.44	75.42
36 C.I.P.	A*†	37.96	1/2x10	3/8	22—3/4x14	5/8x1 5/8	332	69.54	74.71	81.69
42 C.I.P.	A*†	44.20	3/8x10	3/8	26—3/4x14	5/8x1 5/8	350	70.69	76.74	84.85
42 C.I.P.	A*†	44.20	1/2x10	3/8	26—3/4x14	5/8x1 5/8	394	77.81	83.86	91.97
48 C.I.P.	A*†	50.50	3/8x10	3/8	28—3/4x14	5/8x1 5/8	389	81.71	92.53	96.71
48 C.I.P.	A*†	50.50	1/2x10	3/8	28—3/4x14	5/8x1 5/8	440	89.47	100.29	104.47
54 C.I.P.	A†	56.66	3/8x10	3/8	32—3/4x14	5/8x1 5/8	437	.....	.....	.....
54 C.I.P.	A†	56.66	1/2x10	3/8	32—3/4x14	5/8x1 5/8	493	.....	.....	.....
60 C.I.P.	A†	62.80	3/8x10	7/16	34—3/4x14	5/8x1 3/4	481	.....	.....	.....
60 C.I.P.	A†	62.80	1/2x10	7/16	34—3/4x14	5/8x1 3/4	542	.....	.....	.....
72 C.I.P.	A†	75.34	3/8x10	7/16	40—3/4x14	5/8x1 3/4	566	.....	.....	.....
72 C.I.P.	A†	75.34	1/2x10	7/16	40—3/4x14	5/8x1 3/4	640	.....	.....	.....

Special sizes and couplings for other o.d. within each nominal size above are not shown in this table but can be furnished. Details and prices on request for any size or class of cast iron pipe. Couplings for cast iron pipe having the same o.d. as steel pipe can also be furnished.

Middle rings thicker or longer than those shown can be supplied in certain sizes for special conditions if order is sufficiently large.

*Both standard A.G.A. pipe and A.W.W.A. Class A pipe, each of which has the same o.d. The coupling sizes listed above also are suitable for certain standard sizes of plain end, centrifugally cast pipe.

†A.W.W.A. Classes B, C, and D pipe, and other classes are not shown in sizes 30 to 72 inches, inclusive.

‡Followers so indicated are made from special-section bar steel. All other followers are pressed from steel plate.

Style 38 Couplings For Light-Wall Steel Pipe

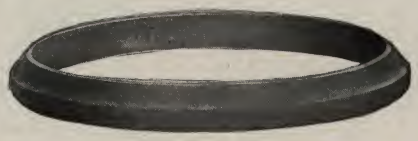
2 O.D.	.....	2.000	.148x4	**	2—1/2x6	11/32x5/8	.19	$1.34	$1.62	$1.95
2 I.D.	.....	2.375	.154x4	**	3—1/2x6	3/8x3/4	4.63	1.89	2.13	2.48
2 3/4 CAS.	.....	3.000	.165x4	**	3—1/2x6	3/8x7/8	6.31	2.22	2.51	2.79
3 I.D.	.....	3.500	3/16x4	.134	3—1/2x6	3/8x7/8	6.85	2.42	2.79	3.06
3 1/2 I.D.	.....	4.000	3/16x4	.134	4—1/2x6	3/8x7/8	7.38	2.55	2.97	3.32
4 I.D.	.....	4.500	3/16x4	.134	4—1/2x6	3/8x7/8	8.06	2.77	3.18	3.62
4 1/2 I.D.	.....	5.000	3/16x4	.134	4—1/2x6	3/8x7/8	8.75	2.97	3.39	3.85
5 3/16 CAS.	.....	5.500	3/16x4	.134	4—1/2x6	3/8x7/8	9.57	3.26	3.77	4.14
5 5/8 CAS.	.....	6.000	3/16x4	.134	4—5/8x6	3/8x7/8	10.38	3.52	4.05	4.42
6 I.D.	.....	6.625	3/16x4	.134	4—5/8x6	3/8x7/8	11.38	3.76	4.33	4.75
6 5/8 CAS.	.....	7.000	3/16x4	.134	4—5/8x6	3/8x7/8	12.50	4.42	5.01	5.48
7 5/8 CAS.	.....	8.000	3/16x4	.134	6—5/8x6	3/8x7/8	13.63	4.91	5.44	6.10
8 I.D.	.....	8.625	3/16x4	.134	6—5/8x6	3/8x7/8	15.00	5.10	5.67	6.37
9 5/8 CAS.	.....	10.000	1/4x5	3/16	8—5/8x7 1/2	1/2x1	30.00	7.41	7.96	9.15
11 5/8 CAS.	.....	12.000	1/4x5	3/16	8—5/8x7 1/2	1/2x1	34.50	8.62	9.21	10.80

Lead-tipped gaskets are not available for couplings for light-wall pipe; duck-tipped only on special order.

**Followers for these sizes are malleable. All others are pressed from steel plate.

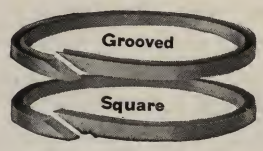
Dresser Gaskets for Couplings, Long Sleeves, and Fittings

For Styles 31, 38, 40, 53, 56, 58, 62, 64, 67, 68, 69, 71, 72, and 76



Sizes for Steel Pipe

Gasket Section Dimensions Inches	Plain Grade 27 Each	Armored Grade 27 or Duck-Tipped Grade 27 Each	Lead-Tipped Grade 27 or Plain Grade 29 Each	Nominal Pipe Size Inches	O.D. Pipe Inches
11/32x 5/8	$.06½	$.13	$.25½	⅜ I.D.	.675
9/32x 9/16	.06½	.13	.25½	½ I.D.	.840
9/32x 9/16	.06½	.16½	.28½	¾ I.D.	1.050
9/32x 9/16	.07½	.17½	.35	1 I.D.	1.315
9/32x 9/16	.09	.22	.48½	1¼ I.D	1.660
11/32x 5/8	.14½	.31	.55	1½ I.D.	1.900
11/32x 5/8	.14½	.31	.56	2 O.D.	2.000
½ x 29/32	.22	.35	.60½	2 I.D.	2.375
½ x 29/32	.25½	.38½	.68	2½ I.D.	2.875
½ x 29/32	.25½	.40½	.72½	2¾ CAS.	3.000
½ x 29/32	.28½	.47½	.84½	3 I.D.	3.500
½ x 29/32	.33	.54	.89	3½ I.D.	4.000
½ x 29/32	.37½	.58½	.94½	4 I.D.	4.500
½ x 29/32	.42	.62½	1.06½	4½ I.D.	5.000
½ x 29/32	.42	.66	1.12	5 CAS.	5.250
½ x 29/32	.44	.69½	1.13½	5 3/16 CAS.	5.500
½ x 29/32	.44	.69½	1.13½	5 I.D.	5.563
½ x1	.47½	.67	1.05½	5⅝ CAS.	6.000
½ x1⅛	.56	.73½	1.20	5⅝ CAS.	6.000
½ x1	.50½	.73½	1.21	6 I.D.	6.625
½ x1⅛	.61½	.84½	1.36½	6 I.D.	6.625
½ x1	.53	.76	1.36½	6⅝ CAS.	7.000
½ x1⅛	.66	.90	1.57½	6⅝ CAS.	7.000
½ x1	.61½	.88	1.50½	7⅝ CAS.	8.000
½ x1⅛	.73½	1.05½	1.74	7⅝ CAS.	8.000
½ x1	.66	.94½	1.63	8 I.D.	8.625
½ x1⅛	.79	1.16½	1.88	8 I.D.	8.625
⅝ x1 3/16	.99	1.35½	2.14½	8 I.D.	8.625
½ x1	.68	.95½	1.55	9⅝ CAS.	10.000
½ x1⅛	.84½	1.15½	1.82½	9⅝ CAS.	10.000
½ x1	.75	1.02½	1.59½	10 I.D.	10.750
½ x1⅛	.91½	1.19	1.89	10 I.D.	10.750
⅝ x1 3/16	1.12	1.55	2.12½	10 I.D.	10.750
½ x1	.82½	1.12	1.91½	11⅝ CAS.	12.000
½ x1⅛	1.00	1.32	2.15½	11⅝ CAS.	12.000
½ x1	.88	1.17½	1.91½	12 I.D.	12.750
½ x1⅛	1.06½	1.41	2.18	12 I.D.	12.750
⅝ x1 3/16	1.34	1.79½	2.53	12 I.D.	12.750
½ x1⅛	1.17½	1.63	2.60½	14 O.D.	14.000
⅝ x1 3/16	1.45	2.02½	3.15½	14 O.D.	14.000
½ x1⅛	1.34	1.89	2.81½	16 O.D.	16.000
⅝ x1 3/16	1.65	2.31	3.44½	16 O.D.	16.000
½ x1⅛	1.50½	2.12½	3.51	18 O.D.	18.000
⅝ x1 3/16	1.85	2.62	3.79½	18 O.D.	18.000
½ x1⅛	1.66	2.36½	3.76	20 O.D.	20.000
⅝ x1 3/16	2.05½	2.91½	4.55½	20 O.D.	20.000
½ x1 3/16	1.92½	2.69½	4.71	22 O.D.	22.000
⅝ x1 3/16	2.24½	3.20	4.98½	22 O.D.	22.000
⅝ x1⅜	2.73	3.89½	6.05	22 O.D.	22.000
½ x1 3/16	2.10	2.93½	5.15	24 O.D.	24.000
⅝ x1 3/16	2.44	3.56½	5.31½	24 O.D.	24.000
⅝ x1⅜	3.04½	4.47½	6.65½	24 O.D.	24.000



For Style 4

Gasket Section Overall Dimen. In.	Plain Grade 27 Each	Nominal Pipe Size In.	O.D. Pipe In.
3/16x5/16	$.04½	¾ I.D.	1.050
3/16x5/16	.04½	1 I.D.	1.315
3/16x5/16	.06½	1¼ I.D.	1.660
7/32x5/16	.07½	1½ I.D.	1.900
9/32x5/8	.13	2 I.D.	2.375
11/32x5/8	.16½	2½ I.D.	2.875
11/32x5/8	.21	3 I.D.	3.500
11/32x¾	.24	3½ I.D.	4.000
23/64x¾	.31	4¼ CAS	4.500
23/64x¾	.31	4 I.D.	4.500

Dresser Gaskets for Collar Clamps

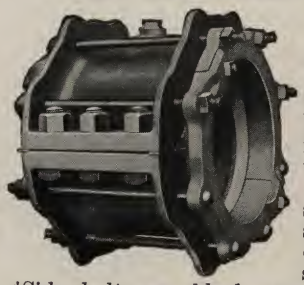
For Style 41

Gasket Section Overall Dimen, In.	Plain Grade 27 Each	Nominal Pipe Size In.	O.D. Pipe In.
⅜x¾	$.28½	4¾ CAS	5.000
⅜x¾	.28½	4½ I.D.	5.000
5/16x¾	.29½	5 CAS	5.250
5/16x¾	.32	5 3/16 CAS	5.500
7/16x21/32	.35	5 I.D.	5.563
11/32x¾	.29½	5⅝ CAS	6.000
11/32x¾	.44	6¼ CAS	6.625
7/16x¾	.44	6 I.D.	6.625
23/64x¾	.35	6⅝ CAS	7.000
½x1 1/16	.59½	7⅝ CAS	8.000
½x¾	.61½	8¼ CAS	8.625
½x¾	.61½	8 I.D.	8.625
7/16x¾	.56	9⅝ CAS	10.000
⅝x23/32	.93½	10 I.D.	10.750
7/16x¾	.69½	11⅝ CAS	12.000
⅝x23/32	1.09	12 I.D.	12.750

Dresser Track-Head Black Steel Bolts

Nom. Diam. and Lgth. In.	Per 1000	Nom. Diam. and Lgth. In.	Per 1000	Nom. Diam. and Lgth. In.	Per 1000
⅜x5	$ 38.24	⅝x 5½	$89.06	⅝x14	$159.72
½x2	40.17	⅝x 6	93.17	⅝x15	167.95
½x2½	43.32	⅝x 6½	97.28	⅝x19	201.34
½x3	46.46	⅝x 7	101.40	⅝x19½	205.46
½x3½	49.61	⅝x 7½	105.51	⅝x24	243.21
½x4	52.76	⅝x 8	109.63	⅝x27	268.14
½x5¾	65.10	⅝x 8½	113.98	⅝x27½	276.12
½x6½	77.92	⅝x 9	118.10	⅝x30	293.55
½x6¾	80.83	⅝x 9½	122.21	¾x12	199.17
½x9	93.41	⅝x10	126.32	¾x14	222.16
½x14	123.66	⅝x10½	130.44	¾x18	267.17
⅝x3½	72.36	⅝x11	134.79	¾x19½	285.32
⅝x4	76.71	⅝x11½	138.91	¾x27½	382.84
⅝x4½	80.83	⅝x12	143.02	.....	.....
⅝x5	84.94	⅝x13½	155.61	.....	.....

Style 52A Dresser Cast Split Sleeves



For Steel Pipe

*Special sizes not shown but can be furnished by making up welded-steel split sleeves of proper style. Details and prices on request. For 2 and 3-inch i.d. sizes, Style 73 may be used.

†Follower bolts are black steel with track heads and square nuts. Galvanized, cadmium-plated, or other special bolts at extra cost.

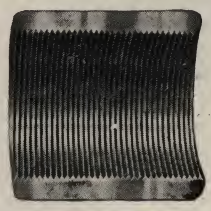
‡Side bolts are black, squarehead machine bolts, have hexagonal nuts. Made of special high tensile steel. Galvanized or cadmium-plated, extra.

§Gaskets for both end and side packs are of rubber compound type. Specify service when ordering.

*Nom. Pipe Size In.	O.D. Pipe In.	†No., Diam., and Lgth. Follower Bolts In.	‡No., Diam., and Lgth. Side Bolts In.	§Section Dimen., End Gasket In.	Side Gasket —Inches— Section	Lgth.	Approx. Ship. Wt. Lb.	§With Plain Gaskets Each
4 I.D.	4.500	4-¾x18	6- ¾x3	½x1	½x	¾	11¼ 140	$60.04
6 I.D.	6.625	6-¾x18	8- ¾x3	½x1⅛	½x	¾	11¼ 177	66.79
8 I.D.	8.625	6-¾x18	8- ⅞x3½	½x1⅛	½x	¾	11¼ 215	80.70
8 I.D. (Long)	8.625	6-¾x27½	16- ⅞x3½	½x1⅛	½x	¾	21 329	On App.
10 I.D.	10.750	8-¾x18	8- ⅞x3½	½x1⅛	½x	¾	11¼ 250	91.98
10 I.D. (Long)	10.750	8-¾x27½	16- ⅞x3½	½x1⅛	½x	¾	21 373	On App.
12 I.D.	12.750	8-¾x18	6-1 x4	½x1⅛	½x1		11¼ 316	115.50
12 I.D. (Long)	12.750	8-¾x27½	12-1 x4	½x1⅛	½x1		21 456	On App.
14 O.D.	14.000	8-¾x18	6-1⅛x4½	½x1¼	½x1		11¼ 357	135.17
16 O.D.	16.000	8-¾x18	6-1⅛x4½	½x1¼	½x1		11¼ 370	138.80
18 O.D.	18.000	10-¾x18	6-1⅛x4½	½x1¼	½x1		11¼ 428	159.24
20 O.D.	20.000	10-¾x18	6-1¼x5⅛	½x1¼	½x1		11¼ 466	187.02
22 O.D.	22.000	12-¾x18	6-1¼x5⅛	½x1¼	½x1		11¼ 544	206.71
24 O.D.	24.000	14-¾x18	6-1¼x5⅛	½x1¼	½x1		11¼ 668	236.65
26 O.D.	26.000	14-¾x18	6-1⅜x5	½x1¼	½x1		11¼ 725	259.89

Standard Steel Pipe Couplings

1000 Pounds Cold Working Pressure



Right hand steel coupling furnished seamless and lap-welded. Sizes ¼ to 2-inch furnished taper tapped at additional cost. All weights and dimensions are nominal.

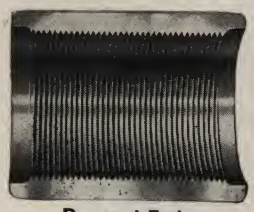
Size In.	Black Each	Galvanized Each	Outside Diameter Inches	Length Inches	Threads per Inch	Taper per Foot Inches	Wt. Lb. Each
⅛	....	....	.563	13/16	27	None	.030
¼	....	....	.719	13/16	18	None	.044
⅜	....	....	.875	13/16	18	None	.072
½	....	....	1.063	19/16	14	None	.118
¾	....	....	1.313	1⅝	14	None	.214
1	....	....	1.576	2	11½	None	.350
1¼	....	....	1.900	2 1/16	11½	None	.546
1½	....	....	2.200	2 1/16	11½	None	.758
2	....	....	2.750	2⅛	11½	None	1.233
2½	....	....	3.250	3⅛	8	*¾	1.755
3	....	....	4.000	3¼	8	*¾	2.549
3½	....	....	4.625	3⅜	8	*¾	4.328
4	....	....	5.000	3½	8	*¾	5.410
5	....	....	6.296	3¾	8	*¾	9.158
6	....	....	7.390	4	8	*¾	10.823
8	....	....	9.625	5¼	8	*¾	15.843
10	....	....	11.750	5¾	8	*¾	33.923
12	....	....	14.000	6⅛	8	*¾	48.266

*¾-inch taper per foot, on diameter.

Extra Heavy Seamless Steel Pipe Couplings

Black and Galvanized

Recessed Ends or Not Recessed Ends



Recessed Ends
No. 716

Not Recessed Ends
No. 715

Couplings with recessed ends furnished in sizes up to and including 1½ inches only.

Couplings with ends not recessed regularly carried in stock.

All Weights and Dimensions are Nominal

Size Inches	Black Each	Galv. Each	Outside Diameter Inches	Length Inches	Threads per Inch	Type of Thread	Weight Pounds per 1000 Pieces
⅛	$14.10	$17.25	.562	1⅛	27	Straight	35
¼	19.90	21.70	.718	1⅜	18	Straight	68
⅜	21.20	23.00	.906	1⅝	18	Straight	130
½	28.00	33.80	1.160	1⅞	14	Straight	273
¾	34.50	40.00	1.410	2⅛	14	Straight	415
1	51.80	57.30	1.667	2⅜	11½	Straight	598
1¼	54.00	61.80	2.034	2⅞	11½	Straight	980
1½	58.20	67.00	2.274	2⅞	11½	Straight	1100
2	98.80	122.00	2.870	3⅝	11½	Taper	2174
2½	162.00	192.00	3.389	4⅛	8	Taper	3433
3	192.60	224.00	4.014	4⅛	8	Taper	4131
3½	256.50	303.60	4.628	4⅝	8	Taper	6289
4	291.00	339.60	5.216	4⅝	8	Taper	8155

Sizes 1½-inch and smaller can be furnished taper tapped at higher prices.

When ordering, specify whether recessed or not recessed ends are desired.

A.P.I. Line Pipe Couplings

Recessed Type

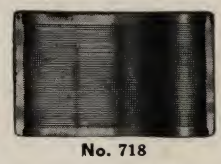
Made of seamless steel. Sizes up to ⅜ inch dipped in rust-resistant coating, other sizes have threads electro-galvanized and outside painted.

Nom. Size In.	Black Each	Galv. Each	O.D. In.	Lgth. In.	Recess Diam. In.	Recess Depth In.	Threads per In.	Approx. Wt. Lb. per 100
⅛	....	....	.563	1 1/16	.468	3/32	27	4
¼	....	....	.719	1⅝	.603	3/16	18	9
⅜	....	....	.875	1⅝	.738	3/16	18	13
½	....	....	1.063	2⅛	.903	9/32	14	23
¾	....	....	1.313	2⅛	1.113	9/32	14	33
1	....	....	1.576	2⅝	1.378	5/16	11½	52
1¼	....	....	2.054	2¾	1.723	5/16	11½	101
1½	....	....	2.200	2¾	1.963	5/16	11½	88
2	....	....	2.875	3¼	2.469	5/16	11½	211
2½	....	....	3.375	4⅛	2.969	½	8	328
3	....	....	4.000	4¼	3.594	½	8	409
3½	....	....	4.625	4⅜	4.094	½	8	591
4	....	....	5.200	4½	4.594	½	8	760

Sizes to and including 12 inches are available.

The Approximate Weights of
STANDARD AND EXTRA HEAVY CAST IRON SCREWED FITTINGS
are shown on page 547

Casing Couplings



No. 718

Weights and dimensions subject to a manufacturing variation above and below standard. Subject to change without notice. In ordering always specify size and weight of casing for which they are intended; also number of threads per inch.

Size In.	Each Black	Each Galvanized	Threads per Inch	Outside Diam. In.	Length In.	Approx. Weight Pounds
2	$.24	$.26	14	2.714	2⅝	1.41
2¼	.27	.29	14	2.964	2⅝	1.55
2½	.30	.32	14	3.214	2⅞	1.88
2¾	.34	.37	14	3.464	2⅞	2.04
3	.37	.40	14	3.771	3⅛	2.72
3¼	.45	.50	14	4.021	3⅛	2.92
3½	.50	.55	14	4.271	3⅛	3.12
3¾	.55	.61	14	4.521	3⅛	3.31
4	.70	.76	14	4.771	3⅝	4.12
4¼	.72	.78	14	5.021	3⅝	4.35
4½	.75	.82	14	5.271	3⅝	4.58
4¾	.80	.88	14	5.521	3⅝	4.81
5	.85	.94	14	5.828	4⅛	6.29
5 3/16	.90	1.00	14	6.078	4⅛	6.58
5⅝	.95	1.07	14	6.664	4⅛	8.13
6¼	1.15	1.30	14	7.308	4⅝	10.45
6⅝	1.20	1.35	14	7.692	4⅝	11.43
7¼	1.50	1.70	14	8.317	4⅝	12.10
7⅝	1.75	1.95	11½	8.788	5⅛	16.26
8¼	1.90	2.10	11½	9.413	5⅛	17.47
8⅝	2.00	2.25	11½	9.788	5⅛	18.20
9⅝	3.00	3.35	11½	10.911	6⅛	27.86
10⅝	5.25	5.60	11½	11.911	6⅛	30.34
11⅝	5.50	5.95	11½	12.911	6⅛	33.00
12½	5.75	6.25	11½	14.025	6⅛	39.99
13½	6.50	7.10	11½	15.139	6⅛	47.31
14½	8.75	9.50	11½	16.263	6⅛	55.58
15½	10.25	11.00	11½	17.263	6⅛	59.15

Standard Cast Iron Screwed Fittings

90° Straight Elbows

No. 300, Right Hand

Size Inches	Black Each	Galv. Each
1/4	$.05	$.10
3/8	.05	.10
1/2	.06	.12
3/4	.08	.16
1	.10 1/2	.21
1 1/4	.16	.32
1 1/2	.20	.40
2	.28	.56
2 1/2	.50	1.00
3	.75	1.50
3 1/2	1.05	2.10
4	1.20	2.40
5	2.00	4.00
6	2.75	5.50
8	6.75	13.50
10	13.50	27.00
12	20.00	40.00

No. 301, Right and Left

1/4	$.06	$.12
3/8	.06	.12
1/2	.07	.14
3/4	.09	.18
1	.12	.24
1 1/4	.18	.36
1 1/2	.23	.46
2	.32	.64
2 1/2	.60	1.20
3	.85	1.70

Straight Pitched Elbows

Tapped to Pitch 1/4-Inch to the Foot

1/2	$.08	$.16
3/4	.10	.20
1	.13	.26
1 1/4	.20	.40
1 1/2	.25	.50
2	.35	.70
2 1/2	.65	1.30
3	1.00	2.00
3 1/2	1.30	2.60
4	1.50	3.00

60° Elbows

No. 303

1/2	$.25	$.50
3/4	.30	.60
1	.35	.70
1 1/4	.45	.90
1 1/2	.50	1.00
2	.60	1.20
2 1/2	1.10	2.20
3	1.65	3.30
4	2.75	5.50
5	5.00	10.00
6	7.00	14.00

45° Elbows

No. 304

Size Inches	Black Each	Galv. Each
1/4	$.06	$.12
3/8	.06	.12
1/2	.07	.14
3/4	.10	.20
1	.12	.24
1 1/4	.19	.38
1 1/2	.24	.48
2	.34	.68
2 1/2	.60	1.20
3	.90	1.80
3 1/2	1.25	2.50
4	1.45	2.90
5	2.50	5.00
6	3.45	6.90
8	8.50	17.00
10	17.00	34.00
12	25.00	50.00

22 1/2° Elbows

1/2	$.25	$.50
3/4	.30	.60
1	.35	.70
1 1/4	.45	.90
1 1/2	.50	1.00
2	.60	1.20
2 1/2	1.10	2.20
3	1.65	3.30
4	2.75	5.50
5	5.00	10.00
6	7.00	14.00

Reducing Elbows

No. 302

3/8	$.06	$.12
1/2	.07	.14
3/4	.09	.18
1	.12	.24
1 1/4	.18	.36
1 1/2	.23	.46
2	.32	.64
2 1/2	.60	1.20
3	.85	1.70
3 1/2	1.20	2.40
4	1.40	2.80
5	2.30	4.60
6	3.15	6.30
8	7.75	15.50
10	15.50	31.00
12	23.00	46.00

Pitched Reducing Elbows

Tapped to Pitch 1/4-Inch to the Foot

3/4	$.10	$.20
1	.13	.26
1 1/4	.20	.40
1 1/2	.25	.50
2	.35	.70
2 1/2	.65	1.30
3	1.00	2.00
3 1/2	1.30	2.60

Standard Cast Iron Screwed Fittings

Straight Tees

No. 309

Size In.	Black Each	Galv. Each	Size In.	Black Each	Galv. Each
1/4	$.08	$.16	3	$1.10	$2.20
3/8	.08	.16	3 1/2	1.50	3.00
1/2	.09	.18	4	1.75	3.50
3/4	.12	.24	5	3.00	6.00
1	.15	.30	6	4.00	8.00
1 1/4	.23	.46	8	9.75	19.50
1 1/2	.29	.58	10	19.50	39.00
2	.41	.82	12	29.00	58.00
2 1/2	.73	1.46	....	.....	.....

Reducing Tees

No. 310, on Run

No. 311, on Outlet

Size In.	Black Each	Galv. Each	Size In.	Black Each	Galv. Each
3/8	$.09	$.18	3	$1.25	$2.50
1/2	.10	.20	3 1/2	1.75	3.50
3/4	.14	.28	4	2.00	4.00
1	.17	.34	5	3.50	7.00
1 1/4	.27	.54	6	4.60	9.20
1 1/2	.33	.66	8	11.25	22.50
2	.47	.94	10	22.50	45.00
2 1/2	.83	1.66	12	33.50	67.00

Tees reducing on the run are described thus:

1 1/2 — 1 — 1 1/4

and are read 1 1/2x1 1/4x1.

Tees reducing on the outlet are described thus:

1 1/2 — 1 — 1 1/2

and are read 1 1/2x1.

Straight Crosses

No. 313

Size In.	Black Each	Galv. Each	Size In.	Black Each	Galv. Each
1/4	$.15	$.30	3	$2.00	$4.00
3/8	.15	.30	3 1/2	2.70	5.40
1/2	.16	.32	4	3.15	6.30
3/4	.22	.44	5	5.50	11.00
1	.27	.54	6	7.25	14.50
1 1/4	.42	.84	8	17.50	35.00
1 1/2	.53	1.06	10	35.00	70.00
2	.75	1.50	12	52.50	105.00
2 1/2	1.30	2.60	..	.....	.....

Reducing Crosses

No. 314

Size In.	Black Each	Galv. Each	Size In.	Black Each	Galv. Each
1/2	$.18	$.36	3 1/2	$3.00	$6.00
3/4	.25	.50	4	3.50	7.00
1	.30	.60	5	6.00	12.00
1 1/4	.46	.92	6	8.00	16.00
1 1/2	.60	1.20	8	19.25	38.50
2	.83	1.66	10	38.50	77.00
2 1/2	1.45	2.90	12	58.00	116.00
3	2.20	4.40	..	.....	.....

Y Branches

No. 316

Size In.	Black Each	Galv. Each	Size In.	Black Each	Galv. Each
1/2	$.20	$.40	3 1/2	$3.50	$7.00
3/4	.28	.56	4	4.00	8.00
1	.34	.68	5	7.00	14.00
1 1/4	.54	1.08	6	9.20	18.40
1 1/2	.66	1.32	8	22.50	45.00
2	.94	1.88	10	45.00	90.00
2 1/2	1.66	3.32	12	67.00	134.00
3	2.50	5.00	....	.....	.....

Standard Cast Iron Screwed Fittings
Close Pattern Return Bends

No. 324

Close pattern return bends will not make up parallel coils, as the distance, center to center, of two adjacent bends is greater than the center to center of opening of a single bend.

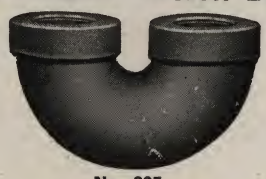
Size Inches	Right Hand Black Each	Right Hand Galvanized Each	Right & Left Hand Black Each	Right & Left Hand Galv. Each	Left Hand Black Each	Left Hand Galv. Each	Center to Center Inches
½	$.18	$.36	$.21	$.42	$.21	$.42	1¼
¾	.20	.40	.23	.46	.23	.46	1½
1	.22	.44	.26	.52	.26	.52	1¾
1¼	.28	.56	.33	.66	.33	.66	2¼
1½	.40	.80	.46	.92	.46	.92	2½
2	.57	1.14	.66	1.32	.66	1.32	3¼
2½	1.20	2.40	1.40	2.80	1.40	2.80	3¾
3	1.70	3.40	1.95	3.90	1.95	3.90	4¼
4	5.00	10.00	5.25	10.50	5.25	10.50	6

Close Pattern Pitched Return Bends

Size In.	Right Hand Blk. Each	Right Hand Galv. Each	C. to C. In.	Lgth. Coil Ft.	Size In.	Right Hand Blk. Each	Right Hand Galv. Each	C. to C. In.	Lgth. Coil Ft.	Size In.	Right Hand Blk. Each	Right Hand Galv. Each	C. to C. In.	Lgth. Coil Ft.
1	$.26	$.52	1¾	3	1	$.26	$.52	1¾	6	1¼	$.33	$.66	2¼	5
1	.26	.52	1¾	4	1	.26	.52	1¾	8	1¼	.33	.66	2¼	6
1	.26	.52	1¾	5	1¼	.33	.66	2¼	4	....	....	....	....	....

All right and left pitched return bends made to order; 1-inch bends for coils longer than 8 feet tapped straight. Pitched return bends have length of coil marked on them.

Open Pattern Return Bends



No. 325

Size In.	Right Hand Black Each	Right Hand Galv. Each	R. & L. Hand Black Each	R. & L. Hand Galv. Each	Center to Center In.	Size In.	Right Hand Black Each	Right Hand Galv. Each	R. & L. Hand Black Each	R. & L. Hand Galv. Each	Center to Center In.
¾	$.26	$.52	$.30	$.60	1⅞	2	$.80	$1.60	$.92	$1.84	4½
1	.30	.60	.35	.70	2½	2½	1.35	2.70	1.55	3.10	5½
1¼	.40	.80	.46	.92	3	3	2.20	4.40	2.50	5.00	6½
1½	.55	1.10	.64	1.28	3½	4	6.50	10.00	7.00	14.00	7½

Return Bends with Back Outlet

Size In.	Right Hand Blk. Each	Right Hand Galv. Each	R. & L. Hand Blk. Each	R. & L. Hand Galv. Each	C. to C. In.	Size Back Outlet In.	Size In.	Right Hand Blk. Each	Right Hand Galv. Each	R. & L. Hand Blk. Each	R. & L. Hand Galv. Each	C. to C. In.	Size Back Outlet In.
¾	$.38	$.76	$.42	$.84	1⅞	¾	1½	$.80	$1.60	$.95	$1.90	2¼	1½
1	.42	.84	.48	.96	2¼	1	1½	Prices on Application				4	1½
1	Prices on Application				4	1¼	2	1.15	2.30	1.30	2.60	3¼	2
1¼	.60	1.20	.70	1.40	2¼	1¼	2	Prices on Application				4	1½
1¼	Prices on Application				3¼	1½	2½	2.00	4.00	2.30	4.60	3¾	2½
							3	3.00	6.00	3.50	7.00	4¼	3

The back outlet of right and left return bends is threaded right hand.

Wide Pattern Return Bends

No. 326

Size Inches	Right Hand Black Each	Right Hand Galv. Each	Center to Center Inches	Size Inches	Right Hand Black Each	Right Hand Galv. Each	Center to Center Inches
1	$.45	$.80	3	1½	$1.60	$2.60	6
1	.50	.90	4	1½	2.00	3.25	8
1	.60	1.10	5	2	1.75	3.00	4⅞
1	.75	1.30	6	2	2.00	3.25	6
1	1.00	1.60	8	2	3.00	4.50	7
1¼	1.00	1.75	4	2	3.50	5.00	8
1¼	1.25	2.00	6	4	7.50	11.00	11
1½	1.30	2.30	4⅞	...	....	.....	....

Standard Cast Iron Locknuts

No. 323

Size In.	Black Each	Gal. Each	Size In.	Black Each	Gal. Each
2½	$.27	$.54	6	$1.30	$2.60
3	.34	.68	8	2.35	4.70
3½	.47	.94	10	3.00	6.00
4	.64	1.28	12	4.00	8.00
5	.90	1.80	..	....	.....

Standard Cast Iron Screwed Reducers

No. 318

Size In.	Black Each	Galv. Each	Size In.	Black Each	Galv. Each
¾	$.10	$.20	3½	$1.00	$2.00
1	.16	.32	4	1.35	2.70
1¼	.22	.44	5	2.00	4.00
1½	.28	.56	6	2.70	5.40
2	.43	.86	8	6.75	13.50
2½	.60	1.20	10	10.00	20.00
3	.80	1.60	12	15.00	30.00

Standard Cast Iron Eccentric Reducing Couplings

No. 331

Size In.	Black Each	Galv. Each	Size In.	Black Each	Galv. Each
1¼	$.55	$1.10	3½	$3.00	$6.00
1½	.72	1.44	4	4.00	8.00
2	1.00	2.00	5	6.00	12.00
2½	1.50	3.00	6	8.00	16.00
3	2.40	4.80	8	11.00	22.00

Cast Iron Hexagon Bushings

No. 320

Size In.	Black Each	Galv. Each	Size In.	Black Each	Galv. Each
¾	$.05	$.10	3½	$.40	$.80
1	.06	.12	4	.50	1.00
1¼	.07	.14	5	.93	1.85
1½	.09	.18	6	1.25	2.50
2	.14	.28	8	2.75	5.50
2½	.21	.42	10	3.75	7.50
3	.30	.60	12	5.00	10.00

Cast Iron Face Bushings

4	$1.50	$2.25	6	$3.75	$5.60
5	2.60	3.90	..	....	....

Face Bushings

Size Inches	No. 745 Black Each	No. 746 Galv. Each	Size Inches	No. 745 Black Each	No. 746 Galv. Each
¼	$.08	$.12	3	$.70	$1.05
⅜	.08	.12	3½	1.20	1.80
½	.09	.14	4	1.50	2.25
¾	.11	.17	5	2.60	3.90
1	.13	.20	6	3.75	5.60
1¼	.17	.25	8	9.00	13.50
1½	.22	.33	10	14.00	21.00
2	.32	.48	12	20.00	30.00
2½	.48	.72	..	.....	.....

Standard Cast Iron Eccentric Bushings

No. 332

Size Inches	Black Each	Galv. Each	Size Inches	Black Each	Galv. Each
1¼	$.22	$.44	3½	$.80	$1.60
1½	.25	.50	4	1.00	2.00
2	.27	.54	5	1.85	3.70
2½	.42	.84	6	2.50	5.00
3	.60	1.20	...	....	....

No. 336 Standard Cast Iron Radiator Bushings

Size Inches	Each	Size Inches	Each	Size Inches	Each
1¼x1	$.11	1½x1	$.14	2x1	$.21
1½x ½	.14	1½x1¼	.14	2x1¼	.21
1½x ¾	.14	2x ¾	.21	2x1½	.21

No. 336A Standard Cast Iron Eccentric Radiator Bushings

Size Inches	Each	Size Inches	Each
1¼x½	$.22	2x ½	$.27
1¼x¾	.22	2x ¾	.27
1½x½	.25	2x1	.27
1½x¾	.25	2x1¼	.27

Standard Cast Iron Caps

No. 319

Size Inches	Black Each	Galvanized Each
4	$.87	$1.74
5	1.20	2.40
6	1.55	3.10
8	2.85	5.70
10	5.50	11.00
12	7.00	14.00

Square Head Plugs

No. 321

Size In.	Black Each	Galv. Each	Size In.	Black Each	Galv. Each
*⅛	$.02	$.04	2½	$.18	$.36
*¼	.02	.04	3	.25	.50
*⅜	.02	.04	3½	.38	.76
½	.02	.04	4	.42	.84
¾	.03	.06	5	.88	1.75
1	.04	.08	6	1.20	2.40
1¼	.05	.10	8	2.75	5.50
1½	.07	.14	10	3.75	7.50
2	.10	.20	12	5.00	10.00

Solid Square Head Plugs

Size In.	Black Each	Galv. Each	Size In.	Black Each	Galv. Each	Size In.	Black Each	Galv. Each	Size In.	Black Each	Galv. Each
*⅛	$.02	$.04	¾	$.06	$.12	2	$.15	$.30	4	$.63	$1.26
*¼	.02	.04	1	.08	.16	2½	.27	.54	5	1.35	2.70
*⅜	.02	.04	1¼	.09	.18	3	.38	.76	.....	....	....
½	.04	.08	1½	.11	.22	3½	.57	1.14	.....	....	....

Countersunk Plugs

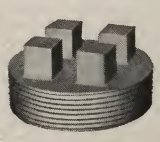
No. 322

Size In.	Black Each	Galv. Each	Size In.	Black Each	Galv. Each
*¼	$.04	$.08	2	$.15	$.30
†⅜	.04	.08	2½	.30	.60
†½	.04	.08	3	.40	.80
†¾	.06	.12	3½	.92	1.84
†1	.08	.16	4	1.10	2.20
†1¼	.09	.18	5	2.00	4.00
1½	.11	.22	6	3.50	7.00

*Steel. †Malleable. All other sizes, cast iron.

Solid Cast Iron Bar Plugs

Right Hand



Generally used with 175 or 250-pound cast iron fittings, 300-pound malleable iron fittings, heavy malleable iron fittings or hydraulic malleable iron fittings.

Size.....in.	4	5	6	8	10	12
Black.....each	$.63	$1.35	$1.80	$4.15	$5.75	$7.50
Galvanized....each	1.26	2.70	3.60	8.30	11.50	15.00

No. 337 Standard Cast Iron Radiator Plugs

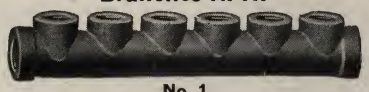
Size.....inches	¾	1	1¼	1½	2
No. 337.....each	$.06	.08	.10	.14	.20

Cast Iron Branch Tees

For Steam Working Pressures Up to 100 Pounds

Branches R. H.

Run Open R.H.

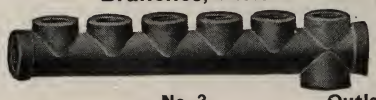


Run Open R.H.

No. 1

Branches, R.H.

Inlet Open R.H.



Closed

No. 2 Outlet Open R.H.

Branches L.H.

Closed

Closed

Inlet Open R.H.
No. 3

1-Inch Branch Tees—2½ Inches Center to Center 2¼ Inches Inside Diameter of Barrel

No. of Branches		Size Run, Back or Side Outlet, Inches: 1 or 1¼	1½	2
2	each	$.90	$1.00	$1.15
3	each	1.05	1.15	1.35
4	each	1.15	1.30	1.60
5	each	1.35	1.45	1.85
6	each	1.60	1.75	2.10
7	each	1.90	2.20	2.45
8	each	2.20	2.45	2.75
9	each	2.65	2.90	3.40
10	each	3.15	3.30	4.00
12	each	4.40	4.75	5.10

1¼-Inch Branch Tees—3 Inches Center to Center 2½ Inches Inside Diameter of Barrel

No. of Branches		Size Run, Back or Side Outlet, Inches: 1¼ or 1½	2	2½
2	each	$1.30	$1.50	$1.95
3	each	1.65	1.90	2.40
4	each	2.00	2.40	2.85
5	each	2.40	2.90	3.55
6	each	2.80	3.30	3.95
7	each	3.20	3.90	4.20
8	each	3.60	4.50	4.95
9	each	4.30	5.25	6.15
10	each	4.80	5.85	6.85
12	each	5.25	6.50	7.65

1½-Inch Branch Tees—3½ Inches Center to Center 2¾ Inches Inside Diameter of Barrel

No. of Branches		Size Run, Back or Side Outlet, Inches: 1½ or 2	2½	3
2	each	$2.10	$2.85	....
3	each	2.70	3.45	....
4	each	3.35	4.15	....
5	each	4.00	5.00	....
6	each	4.65	5.75	....
7	each	5.25	6.50	$7.25
8	each	5.85	7.00	7.75
9	each	6.50	8.25	9.00
10	each	7.60	9.25	10.00
12	each	8.50	10.50	11.50

2-Inch Branch Tees—4½ Inches Center to Center 3½ Inches Inside Diameter of Barrel

No. of Branches		Size Run, Back or Side Outlet, Inches: 2	2½ or 3	3½
2	each	.....	.....	.....
3	each	$5.25	$5.75	.....
4	each	6.40	7.00	.....
5	each	7.65	8.50	.....
6	each	8.80	9.75	.....
7	each	10.60	11.75	.....
8	each	11.50	12.75	.....
9	each	12.25	13.50	$15.00
10	each	.....	.....	16.50

No. 1 branch tees sent unless otherwise specified.
Back outlets charged as additional branches.
Nos. 1 and 2 with branches tapped left hand and No. 3 with branches tapped right hand furnished at regular price.

Cast Iron Long Sweep Fittings

For 125 Pounds Steam Working Pressure

150 Pounds Cold Water, Oil or Gas Non-Shock

No. 353 Elbows

Size Inches	Black Each	Size Inches	Black Each
¾	$.26	3½	$3.25
1	.32	4	3.50
1¼	.40	5	6.50
1½	.55	6	8.75
2	.80	8	17.00
2½	1.20	10	30.00
3	2.25	12	40.00

For prices of reducing sizes, bushed in sand, add 50% to those above. For galvanized fittings, double list given above.

No. 354 Double Branch Elbows

Size Inches	Black Each	Size Inches	Black Each
1	$.64	4	$7.00
1¼	.80	5	13.00
1½	1.10	6	17.50
2	1.60	8	34.00
2½	2.40	10	60.00
3	4.50	12	80.00
3½	6.50	..	.....

For prices of reducing sizes, bushed in sand, add 50% to those above. For galvanized fittings, double list given above.

No. 355 Tees

Size Inches	Black Each	Size Inches	Black Each
¾	$.48	3½	$4.90
1	.48	4	5.25
1¼	.60	5	9.75
1½	.82	6	13.25
2	1.20	8	25.50
2½	1.80	10	45.00
3	3.40	12	60.00

For prices of reducing sizes, bushed in sand, add 50% to those above. For galvanized fittings, double list given above.

No. 356 Double Sweep Tees

Size Inches	Black Each	Size Inches	Black Each
¾	$.52	3½	$6.50
1	.64	4	7.00
1¼	.80	5	13.00
1½	1.10	6	17.50
2	1.60	8	34.00
2½	2.40	10	60.00
3	4.50	12	80.00

For prices of reducing sizes, bushed in sand, add 50% to those above. For galvanized fittings, double list given above.

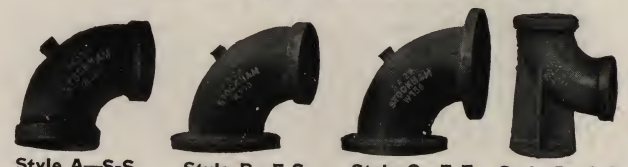
No. 357 Crosses

Size Inches	Black Each	Size Inches	Black Each
1	$.85	4	$9.50
1¼	1.10	5	17.50
1½	1.50	6	24.00
2	2.15	8	45.00
2½	3.20	10	80.00
3	6.00	12	107.00
3½	8.75	..	.....

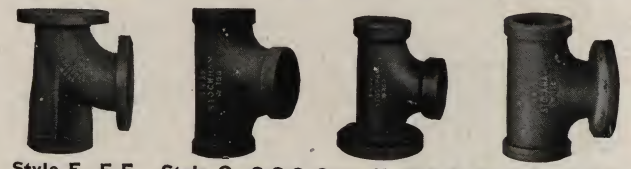
For prices of reducing sizes, bushed in sand, add 50%. For galvanized fittings, double list given above.

Standard Cast Iron Sprinkler Fittings

For Water Working Pressures Up to 175 Pounds



Style A—S-S Style B—F-S Style C—F-F Style D—S-S



Style E—F-F Style G—S-S-S Style H—F-S-S Style K—S-S-F

Style L—F-S-F Style M—F-F-S Style N—F-F-F Style O—S-S-S-S

Style P—F-S-S-S Style R—F-F-S-S Style S—F-F-F-F

S-S, F-S, etc., under illustrations signify Screwed-Screwed, Flanged-Screwed, etc., in the order in which the sizes of openings are named.

Black—Each

Size ..... inches	2½	3	3½
A, Elbows (Screwed)	$1.20	$2.25	$3.25
B, Elbows (Flanged and Screwed)	5.50	6.00	6.50
C, Elbows (Flanged)	6.75	7.50	8.50
D, Elbows (Screwed Base)	.....	8.00	.....
*E, Elbows (Flanged Base)	.....	.....	.....
G, Tees (Screwed)	2.40	4.50	6.50
G, Tees, Reducing (Screwed)	3.60	6.75	9.75
H, Tees (Flanged-Screwed-Screwed)	9.00	10.00	11.00
K, Tees (Screwed-Screwed-Flanged)	9.00	10.00	11.00
L, Tees (Flanged-Screwed-Flanged)	9.00	10.00	11.00
M, Tees (Flanged-Flanged-Screwed)	9.00	10.00	11.00
N, Tees (Flanged)	10.00	11.50	13.00
O, Crosses (Screwed)	3.20	6.00	8.75
P, Crosses (Flgd.-Scrd.-Scrd.-Scrd.)	12.50	13.50	15.00
R, Crosses (Flgd.-Flgd.-Scrd.-Scrd.)	12.50	13.50	15.00
S, Crosses (Flanged)	13.50	15.00	17.00
Size ..... inches	4	5	6
A, Elbows (Screwed)	$3.50	$6.50	$8.75
B, Elbows (Flanged and Screwed)	7.50	10.00	14.00
C, Elbows (Flanged)	10.00	12.50	17.50
D, Elbows (Screwed Base)	11.00	15.00	18.00
*E, Elbows (Flanged Base)	.....	.....	.....
G, Tees (Screwed)	7.00	13.00	17.50
G, Tees, Reducing (Screwed)	10.50	19.50	26.25
H, Tees (Flanged-Screwed-Screwed)	12.00	15.00	22.00
K, Tees (Screwed-Screwed-Flanged)	12.00	15.00	22.00
L, Tees (Flanged-Screwed-Flanged)	12.00	15.00	22.00
M, Tees (Flanged-Flanged-Screwed)	12.00	15.00	22.00
N, Tees (Flanged)	15.00	18.00	26.00
O, Crosses (Screwed)	9.50	17.50	24.00
P, Crosses (Flgd.-Scrd.-Scrd.-Scrd.)	17.00	22.00	30.00
R, Crosses (Flgd.-Flgd.-Scrd.-Scrd.)	17.00	22.00	30.00
S, Crosses (Flanged)	20.00	25.00	35.00

*Made to order; prices on request.

Galvanized at double the above prices. Bases of base elbows not faced or drilled unless specified. Tapped bosses can be furnished for any specifications. For screwed or slip boss, add to above lists $1.50. For solid boss, add to above lists, $1.00. Standard sprinkler fittings with flanged ends have plain faces. Facing and drilling of flanges included in above prices. Order by style letter.

Standard Cast Iron Screwed Fittings

List of Standard Sizes in Inches

125 Pounds Service Steam Pressure

175 Pounds Non-Shock Cold Oil, Water or Gas Pressure

Pitched elbows tapped so pipe will pitch ¼ inch per foot; marked with letter P on band. Right and left hand elbows have ribs on band of end that is tapped left hand. Reducing 60°, 45°, 30° and 22½° elbows and reducing side outlet elbows can be made to order from straight sizes by bushing in the sand. Reducing 90° elbows and pitched elbows not carried in stock will be made to order by bushing in the sand from the nearest stock size.

Elbows

90°

45°

Reducing

90° Right Hand Elbows—Straight Sizes

¼	½	1	1½	2½	3½	5	8	12
⅜	¾	1¼	2	3	4	6	10	..

90° Pitched Elbows—Straight Sizes

½	1	1½	2½	3½
¾	1¼	2	3	4

90° Right and Left Elbows—Straight Sizes

¼	½	1	1½	2½
⅜	¾	1¼	2	3

90° Right Hand Elbows—Reducing Sizes

⅜x ¼	1¼x ⅜	2½x1¼	3½x1¼	6x 3½
½x ⅜	1½x1¼	2½x1	4 x3½	6x 3
½x ¼	1½x1	2½x ¾	4 x3	6x 2½
¾x ½	1½x ¾	3 x2½	4 x2½	6x 2
¾x ⅜	1½x ½	3 x2	4 x2	8x 6
¾x ¼	2 x1½	3 x1½	4 x1½	8x 3
1 x ¾	2 x1¼	3 x1¼	5 x4	10x 8
1 x ½	2 x1	3 x1	5 x3½	12x10
1 x ⅜	2 x ¾	3½x3	5 x3	12x 8
1¼x1	2 x ½	3½x2½	5 x2½	.....
1¼x ¾	2½x2	3½x2	6 x5	.....
1¼x ½	2½x1½	3½x1½	6 x4	.....

90° Pitched Elbows—Reducing Sizes

¾x½	1¼x1	1½x1	2½x2	3½x3
1 x¾	1½x1¼	2 x1½	3 x2½	.....

Side Outlet Elbows—Straight Sizes

1	1¼	1½	2	2½	3	4

45° Elbows—Straight Sizes

¼	¾	1½	3	5	10
⅜	1	2	3½	6	12
½	1¼	2½	4	8	..

60°, 30° and 22½° Elbows—Straight Sizes

½	1	1½	2½	4	6
¾	1¼	2	3	5	..

Tees

Straight

Reducing on Outlet

Reducing on Run

Tees—Straight Sizes

¼	¾	1½	3	5	10
⅜	1	2	3½	6	12
½	1¼	2½	4	8	..

Tees—Reducing Sizes

In describing reducing tees the run is first named, then the outlet. Right and left tees made to order only, state which opening is to be tapped left hand. Other than stock reductions can be made to order from straight sizes by bushing in sand.

⅜x⅜x¼	⅜x⅜x½	¾x ⅜x½	1 x¾x1
⅜x¼x⅜	¼x¼x½	¾x ⅜x⅜	1 x¾x ¾
⅜x¼x¼	¾x¾x½	¾x ¼x¾	1 x¾x ½
¼x¼x⅜	¾x¾x⅜	¾x ¼x½	1 x½x1
½x½x⅜	¾x¾x¼	½x ½x¾	1 x½x ¾
½x½x¼	¾x½x¾	⅜x ⅜x¾	1 x½x ½
½x⅜x½	¾x½x½	1 x1 x¾	1 x⅜x1
½x⅜x⅜	¾x½x⅜	1 x1 x½	1 x¼x1
½x¼x½	¾x½x¼	1 x1 x⅜	¾x¾x1
½x¼x¼	¾x⅜x¾	1 x1 x¼	¾x½x1

Continued

Standard Cast Iron Screwed Fittings

List of Standard Sizes in Inches

125 Pounds Service Steam Pressure

175 Pounds Non-Shock Cold Oil, Water or Gas Pressure

Tees—Reducing Sizes

Continued

½x ½x1	2 x1¼x2	1½x1 x2½	3½x1¼x3
1¼x1¼x1	2 x1¼x1½	1¼x1¼x2½	3½x1 x3½
1¼x1¼x ¾	2 x1¼x1¼	3 x3 x2½	3½x ¾x3½
1¼x1¼x ½	2 x1¼x1	3 x3 x2	3 x3 x3½
1¼x1¼x ⅜	2 x1¼x ¾	3 x3 x1½	3 x2½x3½
1¼x1¼x ¼	2 x1¼x ½	3 x3 x1¼	3 x2 x3½
1¼x1 x1¼	2 x1 x2	3 x3 x1	3 x1½x3½
1¼x1 x1	2 x1 x1½	3 x3 x ¾	2½x2½x3½
1¼x1 x ¾	2 x1 x1¼	3 x3 x ½	2½x2 x3½
1¼x1 x ½	2 x1 x1	3 x2½x3	2 x2 x3½
1¼x ¾x1¼	2 x1 x ¾	3 x2½x2½	4 x4 x3½
1¼x ¾x1	2 x ¾x2	3 x2½x2	4 x4 x3
1¼x ¾x ¾	2 x ¾x1½	3 x2½x1½	4 x4 x2½
1¼x ¾x ½	2 x ¾x1¼	3 x2½x1¼	4 x4 x2
1¼x ½x1¼	2 x ¾x1	3 x2½x1	4 x4 x1½
1¼x ½x1	2 x ¾x ¾	3 x2½x ¾	4 x4 x1¼
1¼x ½x ¾	2 x ¾x ½	3 x2½x ½	4 x4 x1
1¼x ½x ½	2 x ½x2	3 x2 x3	4 x4 x ¾
1¼x ⅜x1¼	2 x ½x1½	3 x2 x2½	4 x4 x ½
1¼x ¼x1¼	2 x ½x1¼	3 x2 x2	4 x3½x4
1 x1 x1¼	2 x ½x ½	3 x2 x1½	4 x3½x3½
1 x ¾x1¼	2 x ⅜x2	3 x2 x1¼	4 x3½x3
1 x ½x1¼	2 x ¼x2	3 x2 x1	4 x3½x2½
¾x ¾x1¼	1½x1½x2	3 x2 x ¾	4 x3½x2
¾x ½x1¼	1½x1¼x2	3 x1½x3	4 x3½x1½
1½x1½x1¼	1½x1 x2	3 x1½x2½	4 x3½x1¼
1½x1½x1	1½x ¾x2	3 x1½x2	4 x3½x1
1½x1½x ¾	1¼x1¼x2	3 x1½x1½	4 x3½x ¾
1½x1½x ½	1¼x1 x2	3 x1½x1¼	4 x3 x4
1½x1½x ⅜	1¼x ¾x2	3 x1¼x3	4 x3 x3½
1½x1½x ¼	1 x1 x2	3 x1¼x2½	4 x3 x3
1½x1¼x1½	1 x ¾x2	3 x1¼x2	4 x3 x2½
1½x1¼x1¼	¾x ¾x2	3 x1 x3	4 x3 x2
1½x1¼x1	2½x2½x2	3 x1 x2½	4 x3 x1½
1½x1¼x ¾	2½x2½x1½	3 x ¾x3	4 x3 x1¼
1½x1¼x ½	2½x2½x1¼	3 x ½x3	4 x3 x1
1½x1 x1½	2½x2½x1	2½x2½x3	4 x3 x ¾
1½x1 x1¼	2½x2½x ¾	2½x2 x3	4 x2½x4
1½x1 x1	2½x2½x ½	2½x1½x3	4 x2½x3½
1½x1 x ¾	2½x2 x2½	2½x1¼x3	4 x2½x3
1½x1 x ½	2½x2 x2	2½x1 x3	4 x2½x2½
1½x ¾x1½	2½x2 x1½	2 x2 x3	4 x2½x2
1½x ¾x1¼	2½x2 x1¼	2 x1½x3	4 x2½x1½
1½x ¾x1	2½x2 x1	1½x1½x3	4 x2½x1¼
1½x ¾x ¾	2½x2 x ¾	3½x3½x3	4 x2½x1
1½x ¾x ½	2½x2 x ½	3½x3½x2½	4 x2 x4
1½x ½x1½	2½x1½x2½	3½x3½x2	4 x2 x3½
1½x ½x1¼	2½x1½x2	3½x3½x1½	4 x2 x3
1½x ½x1	2½x1½x1½	3½x3½x1¼	4 x2 x2½
1½x ½x ¾	2½x1½x1¼	3½x3½x1	4 x2 x2
1½x ½x ½	2½x1½x1	3½x3½x ¾	4 x1½x4
1½x ⅜x1½	2½x1½x ¾	3½x3½x ½	4 x1½x3½
1½x ¼x1½	2½x1¼x2½	3½x3 x3½	4 x1½x3
1¼x1¼x1½	2½x1¼x2	3½x3 x3	4 x1¼x4
1¼x1 x1½	2½x1¼x1½	3½x3 x2½	4 x1 x4
1¼x ¾x1½	2½x1¼x1¼	3½x3 x2	4 x ¾x4
1¼x ½x1½	2½x1¼x1	3½x3 x1½	4 x ½x4
1 x1 x1½	2½x1 x2½	3½x3 x1¼	3½x3½x4
1 x ¾x1½	2½x1 x2	3½x3 x1	3½x3 x4
¾x ¾x1½	2½x1 x1½	3½x3 x ¾	3½x2½x4
2 x2 x1½	2½x1 x1	3½x2½x3½	3½x2 x4
2 x2 x1¼	2½x ¾x2½	3½x2½x3	3 x3 x4
2 x2 x1	2½x ¾x2	3½x2½x2½	3 x2½x4
2 x2 x ¾	2½x ¾x1½	3½x2½x2	3 x2 x4
2 x2 x ½	2½x ½x2½	3½x2½x1½	2½x2½x4
2 x2 x ⅜	2½x ½x2	3½x2 x3½	2½x2 x4
2 x2 x ¼	2 x2 x2½	3½x2 x3	2 x2 x4
2 x1½x2	2 x1½x2½	3½x2 x2½	5 x5 x4
2 x1½x1½	2 x1¼x2½	3½x2 x2	5 x5 x3½
2 x1½x1¼	2 x1 x2½	3½x1½x3½	5 x5 x3
2 x1½x1	2 x ¾x2½	3½x1½x3	5 x5 x2½
2 x1½x ¾	1½x1½x2½	3½x1½x2½	5 x5 x2
2 x1½x ½	1½x1¼x2½	3½x1¼x3½	5 x5 x1½

Continued

Standard Cast Iron Screwed Fittings

List of Standard Sizes in Inches

125 Pounds Service Steam Pressure

175 Pounds Non-Shock Cold Oil, Water or Gas Pressure

Tees—Reducing Sizes

Continued

5x5 x1¼
5x5 x1
5x5 x ¾
5x4 x5
5x4 x4
5x4 x3½
5x4 x3
5x4 x2½
5x4 x2
5x4 x1½
5x4 x1¼
5x4 x1
5x4 x ¾
5x3½x5
5x3½x4
5x3½x3½
5x3½x3
5x3½x2½
5x3 x5
5x3 x4
5x3 x3½
5x3 x3
5x3 x2½
5x3 x2
5x2½x5
5x2½x4
5x2½x3
5x2½x2½
5x2 x5
5x2 x4
5x1½x5
5x1¼x5
5x1 x5
4x4 x5
4x3½x5
4x3 x5

4 x2½x5
4 x2 x5
3½x3½x5
3½x3 x5
3 x3 x5
6 x6 x5
6 x6 x4
6 x6 x3½
6 x6 x3
6 x6 x2½
6 x6 x2
6 x6 x1½
6 x6 x1¼
6 x6 x1
6 x6 x ¾
6 x5 x6
6 x5 x5
6 x5 x4
6 x5 x3½
6 x5 x3
6 x5 x2½
6 x5 x2
6 x5 x1½
6 x5 x1¼
6 x5 x1
6 x5 x ¾
6 x4 x6
6 x4 x5
6 x4 x4
6 x4 x3½
6 x4 x3
6 x4 x2½
6 x4 x2
6 x3½x6
6 x3½x5
6 x3½x4

6x3 x6
6x3 x5
6x3 x4
6x3 x3
6x2½x6
6x2 x6
6x1½x6
6x1¼x6
6x1 x6
5x5 x6
5x4 x6
5x3½x6
5x3 x6
4x4 x6
4x3½x6
8x8 x6
8x8 x5
8x8 x4
8x8 x3½
8x8 x3
8x8 x2½
8x8 x2
8x8 x1½
8x8 x1¼
8x6 x8
8x6 x6
8x6 x5
8x6 x4
8x6 x3
8x6 x2½
8x6 x2
8x6 x1½
8x6 x1¼
8x5 x8
8x5 x5
8x5 x2

8x 4x 8
8x 4x 6
8x 3x 8
8x 2x 8
6x 6x 8
4x 4x 8
10x10x 8
10x10x 6
10x10x 5
10x10x 4
10x10x 3
10x10x 2
10x 8x 8
10x 8x 6
8x 8x10
8x 6x10
10x 6x 6
10x 5x10
10x 4x10
10x 3x10
10x 2x10
10x 4x 6
12x12x10
12x12x 8
12x12x 6
12x12x 5
12x12x 4
12x 8x12
12x10x10
12x 8x10
12x 8x 8
12x 5x12
12x 4x12
12x 3x12
12x 2x12
10x10x12

Side Outlet Tees—Straight Sizes

1	1¼	1½	2	2½	3	4

Crosses—Straight Sizes

¼	1½	5
⅜	2	6
½	2½	8
¾	3	10
1	3½	12
1¼	4	..

Crosses—Reducing Sizes

½x ½x ½x ⅛
½x ¼x ½x ⅛
¾x ¾x ½x ½
¾x ¾x ½x ¼
¾x ½x ½x ½
1 x1 x ¾x ¾
1 x1 x ½x ½
1 x ¾x ¾x ¾
1 x ½x ¾x ¾
1¼x1¼x1 x1
1¼x1¼x ¾x ¾
1¼x1¼x ½x ½
1¼x1 x1 x1
1¼x1 x ¾x ¾
1¼x ¾x ¾x ¾
1¼x ½x1 x1
1¼x ½x1 x ¾
1¼x ½x ¾x ¾
1½x1½x1¼x1¼
1½x1½x1 x1
1½x1½x ¾x ¾
1½x1½x1¼x1¼
1½x1¼x1¼x1¼
1½x1 x1 x1
1½x1 x ¾x ¾
1½x1¼x1¼x1¼
1½x1 x ¾x ¾
1½x1½x1 x1
1½x1½x ¾x ¾
1½x1¼x1 x1
1½x1¼x ¾x ¾

1½x1 x1 x ¾
1½x1 x1 x ½
1½x1 x ¾x ¾
1½x ¾x1 x ¾
1½x ½x1½x1¼
1½x ½x1¼x1¼
1½x ½x1¼x1
1½x ½x1¼x ¾
1½x ½x1 x1
1½x ½x1 x ¾
2 x2 x1½x1½
2 x2 x1¼x1¼
2 x2 x1¼x1
2 x2 x1¼x ¾
2 x2 x1 x1
2 x2 x ¾x ¾
2 x2 x ½x ½
2 x1½x1½x1½
2 x1½x1½x1
2 x1½x1½x ¾
2 x1½x1¼x1¼
2 x1½x1¼x1
2 x1½x1 x1
2 x1½x1 x ¾
2 x1½x ¾x ¾
2 x1½x ½x ½
2 x1¼x1¼x1¼
2 x1¼x1¼x1
2 x1¼x1 x1
2 x1¼x ¾x ¾
2 x1 x1½x ¾
2 x1 x1¼x1¼
2 x1 x1 x1
2 x1 x ¾x ¾
2 x ¾x2 x ½
2 x ½x1½x1½
2 x ½x1½x1¼
2 x ½x1½x1
2 x ½x1½x ¾
2 x ½x1¼x1¼
2 x ½x1¼x ¾
2½x2½x2 x2
2½x2½x1 x1
2½x2½x ¾x ¾
2½x2½x1½x1½
2½x2½x1 x1
2½x2½x ½x ½
2½x1½x1½x1½
2½x1½x1¼x1¼
2½x1½x1 x1
2½x1½x ¾x ¾
2½x2½x1 x1½

Standard Cast Iron Screwed Fittings

List of Standard Sizes in Inches

125 Pounds Service Steam Pressure

175 Pounds Non-Shock Cold Oil, Water or Gas Pressure

Crosses—Reducing Sizes

Continued

2½x2½x ½x ½
2½x2 x2½x2
2½x2 x2 x2
2½x2 x2 x1½
2½x2 x2 x1¼
2½x2 x2 x1
2½x2 x2 x ¾
2½x2 x1½x1½
2½x2 x1½x1¼
2½x2 x1½x1
2½x2 x1½x ¾
2½x2 x1¼x1¼
2½x2 x1¼x1
2½x2 x1¼x ¾
2½x2 x1 x1
2½x2 x1 x ¾
2½x2 x ¾x ¾
2½x1½x1½x1½
2½x1½x1 x1
2½x1½x ¾x ¾
2½x1¼x1¼x1¼
2½x1¼x1 x1
2½x1¼x ¾x ¾
2½x ½x1½x1½
2½x ½x2 x2
2½x ½x2 x1½
2½x ½x1½x1½
2½x ½x1½x1¼
3 x3 x2½x2½
3 x3 x2 x2
3 x3 x2 x1½
3 x3 x2 x1
3 x3 x1½x1½
3 x3 x1½x1¼
3 x3 x1¼x1
3 x3 x1¼x ¾
3 x3 x1 x1
3 x3 x ¾x ¾
3 x2½x2½x2
3 x2½x2½x1½
3 x2½x2½ x2
3 x2½x2 x1½
3 x2½x2 x1¼
3 x2½x2 x1
3 x2½x2 x ¾
3 x2½x1½x1½
3 x2½x1½x1¼
3 x2½x1 x1
3 x2½x ¾x ¾
3 x1½x1½x1½
3 x1½x1 x1
3 x1½x ¾x ¾
3 x1½x ½x ½
3 x1¼x1¼x1¼
3 x1¼x1 x1
3 x1¼x ¾x ¾

3 x2½x1¼x1
3 x2½x1¼x ¾
3 x2½x1 x1
3 x2 x2 x2
3 x2 x2 x1½
3½x3½x3 x3
3½x3½x2½x2½
3½x3½x2 x2
3½x3½x2 x1½
3½x3½x2 x ¾
3½x3½x1½x1½
3½x3½x1½x1¼
3½x3½x1½x1
3½x3½x1½x ¾
3½x3½x1 x1
3½x3½x1¼x1¼
3½x3½x1¼x1
3½x3½x1¼x ¾
3½x3½x1 x1
3½x3 x2½x2½
3½x3 x2½x2
3½x3 x2½x1½
3½x3 x2 x2
3½x3 x2 x1½
3½x3 x2 x1¼
3½x3 x1½x1½
3½x3 x1½x1¼
3½x3 x1½x1
3½x3 x1½x ¾
3½x3 x1¼x1¼
3½x3 x1¼x1
3½x3 x1 x1
4 x4 x3½x3½
4 x4 x3 x3
4 x4 x2½x2½
4 x4 x2 x2
4 x4 x2 x1½
4 x4 x2 x1
4 x4 x1½x1½
4 x4 x1½x1¼
4 x4 x1½x1
4 x4 x1½x ¾
4 x4 x1¼x1¼
4 x4 x1¼x1
4 x4 x1 x1
4 x3½x2½x2½
4 x3½x2½x2
4 x3½x2½x1
4 x3½x2 x2
4 x3½x1½x1½

4x3½x2 x1¼
4x3½x2 x1
4x3½x1½x1½
4x3½x1½x1¼
4x3½x1½x1
4x3½x1¼x1¼
4x3½x1¼x1
4x3 x2½x2
5x5 x4 x4
5x5 x3½x3½
5x5 x3 x3
5x5 x2½x2½
5x5 x2 x2
5x5 x2 x1½
5x5 x1½x1½
5x5 x1½x1¼
5x5 x1½x ¾
5x5 x1¼x1¼
5x5 x1¼x ¾
5x5 x1 x1
5x4 x2½x2½
5x4 x2½x2
5x4 x2 x2
5x4 x2 x1½
5x4 x1½x1½
5x4 x1½x1¼
5x4 x1¼x1
5x4 x1 x1
6x6 x5 x5
6x6 x4 x4
6x6 x3½x3½
6x6 x3 x3
6x6 x2½x2½
6x6 x2 x2
6x6 x2 x1½
6x6 x1½x1½
6x6 x1½x ¾
6x6 x1¼x1¼
6x5 x3 x3
6x5 x2 x2
6x5 x2 x1½
6x5 x1½x1½
8x8 x6 x6
8x8 x5 x5
8x8 x4 x4
10x10 x 8 x 8
10x10 x 6 x 6
12x12 x10 x10
12x12 x 8 x 8

Y Branches

Reducing Y branches can be made to order from straight sizes by bushing in sand.

½	1¼	2½	4	8
¾	1½	3	5	10
1	2	3½	6	12

Close Return Bends

½	1	1½	2½	4
¾	1¼	2	3	..

Open Return Bends

½	1	1½	2½	4
¾	1¼	2	3	..

Wide Return Bends

Size In.	Center to Center In.	Size In.	Center to Center In.	Size In.	Center to Center In.	Size In.	Center to Center In.	Size In.	Center to Center In.
1	3	1	6	1¼	6	1½	8	2	7
1	4	1	8	1½	4⅞	2	4⅞	2	8
1	5	1¼	4	1½	6	2	6	4	11

B.O. Close Return Bends

¾	1	1¼	1½	2	2½	3

B.O. Open Return Bends

¾	1	1¼	1½	2	2½	3

Continued

Standard Cast Iron Screwed Fittings

List of Standard Sizes in Inches

125 Pounds Service Steam Pressure
175 Pounds Non-Shock Cold Oil, Water or Gas Pressure

Continued

Couplings—Reducing Sizes

¾x ½	2½x1	3½x2	5x2½	6x 5
1 x ½	2½x1¼	3½x2½	5x3	8x 4
1 x ¾	2½x1½	3½x3	5x3½	8x 6
1¼x1	2½x2	4 x1½	5x4	10x 6
1½x1¼	3 x1	4 x2	6x2	10x 8
2 x1½	3 x1¼	4 x2½	6x2½	12x 8
2 x1¼	3 x1½	4 x3	6x3	12x10
2 x1	3 x2	4 x3½	6x3½	.....
2½x ¾	3 x2½	5 x2	6x4	.....

Eccentric Couplings—Reducing Sizes

1¼x ¾	2½x1	3½x1	4x2	6x2
1¼x1	2½x1¼	3½x1¼	4x2½	6x2½
1½x ¾	2½x1½	3½x1½	4x3	6x3
1½x1	2½x2	3½x2	4x3½	6x3½
1½x1¼	3 x1	3½x2½	5x2	6x4
2 x ¾	3 x1¼	3½x3	5x2½	6x5
2 x1	3 x1½	4 x1	5x3	8x5
2 x1¼	3 x2	4 x1¼	5x3½	8x6
2 x1½	3 x2½	4 x1½	5x4	.....

Right and Left Couplings—Straight Sizes

¼	½	1	1½	2½
⅜	¾	1¼	2	3

Bushings

Outside Hexagon Bushing

Outside Hexagon Bushings Cast Iron	Inside Hexagon Bushings Cast Iron		Face Bushings Cast Iron	Face Bushings Malleable	Eccentric Bushings Cast Iron
¾x ⅛	1 x ⅛	4x ¾	3 x1½	1 x ¾	2½x1
¾x ¼	1 x ¼	4x1	3 x2	1¼x ½	2½x1¼
¾x ⅜	1 x ⅜	4x1¼	3½x2	1¼x ¾	2½x1½
1 x ½	1¼x ¼	4x1½	3½x2½	1¼x 1	3 x ¾
1¼x ¾	1¼x ⅜	4x2	4 x2		3 x1
1½x 1	1¼x ½	4x2½	4 x2½	1½x ½	3 x1¼
2 x 1¼	1½x ¼	5x1	4 x3	1½x ¾	3 x1½
2½x 1½	1½x ⅜	5x1¼	5 x3	1½x 1	3 x2
3 x 2	1½x ½	5x1½	5 x4	1½x 1¼	3½x1¼
3 x 2½	1½x ¾	5x2	6 x3	2 x ¾	3½x1½
3½x 2½		5x2½	6 x4	2 x 1	3½x2
3½x 3	2 x ¼	5x3	Steel	2 x 1¼	3½x2½
4 x 3	2 x ⅜	6x1	¼x ⅛	2 x 1½	4 x1
4 x 3½	2 x ½	6x1¼	⅜x ⅛		4 x1¼
5 x 3½	2 x ¾	6x1½	⅜x ¼	2½x 1¼	4 x1½
5 x 4	2 x1	6x2	½x ¼	2½x 1½	4 x2
6 x 5	2½x ½	6x2½	½x ⅜	2½x 2	4 x2½
8 x 6	2½x ¾	6x3	Malleable	3 x 2½	4 x3
10 x 8	2½x1	6x3½	½x ⅛	3½x 3	5 x2
12 x10	2½x1¼	6x4	¾x ¼		5 x2½
Steel	3 x ½	8x2	¾x ⅜	4 x 3½	5 x3
¼x ⅛	3 x ¾	8x2½	¾x ½	6 x 5	6 x2
⅜x ⅛	3 x1	8x3	1 x ¼	8 x 6	6 x2½
⅜x ¼	3 x1¼	8x4	1 x ⅜	10 x 8	6 x3
½x ⅛	3 x1½	8x5	1 x ½	12 x10	6 x3½
½x ¼	3½x ¾	10x4	Eccentric Bushings Cast Iron		6 x4
½x ⅜	3½x1	10x5	1¼x ½	2 x ¾	8 x2
Malleable	3½x1¼	10x6	1¼x ¾	2 x1	8 x2½
¾x ½	3½x1½	12x6	1½x ½	2 x1¼	8 x3
1 x ¾	3½x2	12x8	1½x ¾	2½x ½	8 x4
1¼x 1	4 x ½		2 x ½	2½x ¾	
1½x 1¼					
2 x 1½					
2½x 2					

Continued

Standard Cast Iron Screwed Fittings

List of Standard Sizes in Inches

125 Pounds Service Steam Pressure
175 Pounds Non-Shock Cold Oil, Water or Gas Pressure

Concluded

Caps

2½	4	8
3	5	10
3½	6	12

Locknuts

3	4	6	10
3½	5	8	12

Square Head Plugs

*⅛	½	1¼	2½	4	8
*¼	¾	1½	3	5	10
*⅜	1	2	3½	6	12

*Made of steel.

Left Hand Plugs

½	1	1½	2½
¾	1¼	2	3

Countersunk Plugs

½	1¼	2½	4
¾	1½	3	5
1	2	3½	6

Solid Plugs

*¼	¾	1½	3
*⅜	1	2	3½
½	1¼	2½	4
			5

*Made of steel.

No. 351

Standard Cast Iron Flange Unions

Gasket Type

For 125 Pounds Steam Working Pressure
For 175 Pounds Cold Water, Oil or Gas Non-Shock Working Pressure

Size In.	Black Each	Galv. Each	Diam. Flanges In.	No. of Bolts	Size In.	Black Each	Galv. Each	Diam. Flanges In.	No. of Bolts
½	$.40	$.80	2¾	3	3½	$1.80	$3.60	7¼	4
¾	.46	.92	3⅜	3	4	2.10	4.20	7¾	5
1	.52	1.04	3⅝	3	5	3.15	6.30	9⅛	5
1¼	.64	1.28	4⅛	4	6	3.95	7.90	10⅜	6
1½	.78	1.56	4½	4	8	7.00	14.00	12¾	8
2	1.00	2.00	5⅛	4	10	11.50	23.00	15½	10
2½	1.25	2.50	5⅞	4	12	16.00	32.00	17⅞	12
3	1.50	3.00	6⅝	4	....	.....	.....	....	..

No. 415

250-Pound Cast Iron Flange Unions

Gasket Type

For 250 Pounds Steam Working Pressure

For 400 Pounds Cold Water, Oil or Gas Non-Shock Working Pressure

Size Inches	Black Each	Galv. Each	Diameter Flanges Inches	No. of Bolts	Size Inches	Black Each	Galv. Each	Diameter Flanges Inches	No. of Bolts
½	$.70	$1.40	3¼	4	3	$2.25	$4.50	6¾	6
¾	.70	1.40	3¼	4	3½	2.70	5.40	7½	6
1	.80	1.60	3⅝	4	4	3.15	6.30	8	7
1¼	1.00	2.00	4⅛	4	5	4.75	9.50	9⅜	8
1½	1.15	2.30	4⅝	4	6	6.00	12.00	10⅞	9
2	1.50	3.00	5⅜	5	8	10.50	21.00	13¼	10
2½	1.90	3.80	6	5	...	.....	.....	....	..

Cast Iron Oval Floor Flanges

For galvanized, double list.

Pipe Size Inches	Each	Pipe Size Inches	Each	Pipe Size Inches	Each	Pipe Size Inches	Each
½	$.14	1½	$.31	3½	$.75	6	$2.00
¾	.18	2	.44	4	.90	.	....
1	.22	2½	.50	4½	1.40	.	....
1¼	.24	3	.75	5	1.70	.	....

Extra Heavy Cast Iron Screwed Fittings

250 Pounds Service Steam Pressure
400 Pounds Non-Shock Cold Oil, Water or Gas

90° Elbows

No. 400

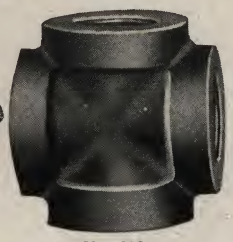
Size In.	Black Each
1/4	$.20
3/8	.20
1/2	.25
3/4	.30
1	.35
1 1/4	.45
1 1/2	.60
2	.75
2 1/2	1.25
3	2.00
3 1/2	2.75
4	3.50
5	5.50
6	8.00
8	17.00
10	28.00
12	40.00

45° Elbows

No. 401

Size In.	Black Each
3/8	$.30
1/2	.35
3/4	.40
1	.44
1 1/4	.55
1 1/2	.70
2	.90
2 1/2	1.50
3	2.50
3 1/2	3.50
4	4.50
5	6.75
6	9.75
8	21.00
10	34.00
12	48.00

Crosses



No. 403

Size In.	Black Each
1	$.70
1 1/4	.90
1 1/2	1.20
2	1.50
2 1/2	2.50
3	4.00
3 1/2	5.50
4	7.00
5	11.00
6	16.00
8	34.00
10	56.00
12	80.00

Tees

No. 402

Size In.	Black Each
1/4	$.35
3/8	.35
1/2	.40
3/4	.45
1	.55
1 1/4	.70
1 1/2	.90
2	1.15
2 1/2	1.80
3	3.00
3 1/2	4.25
4	5.50
5	8.25
6	12.00
8	25.00
10	42.00
12	60.00

Y Branches

No. 404

Size In.	Black Each
1 1/4	$1.35
1 1/2	1.80
2	2.25
2 1/2	3.75
3	6.00
4	11.00
5	16.50
6	24.00
8	50.00

90° Reducing Elbows

Size In.	Black Each
1/2 x 3/8	$.35
1/2 x 1/4	.35
3/4 x 1/2	.40
3/4 x 3/8	.40
1 x 3/4	.45
1 1/4 x 1	.55
1 1/4 x 3/4	.55
1 1/2 x 1 1/4	.75
1 1/2 x 1	.75
1 1/2 x 3/4	.75
2 x 1 1/2	.95
2 x 1 1/4	.95
2 x 1	.95
2 1/2 x 2	1.55
2 1/2 x 1 1/2	1.55
3 x 2 1/2	2.50
3 x 2	2.50
4 x 3	4.40
5 x 4	6.80
6 x 4	10.00
6 x 2 1/2	10.00
8 x 3	21.00
10 Red	35.00
12 x 8	50.00

Reducing Tees

Size In.	Black Each	Size In.	Black Each
1/2	$.55	3 1/2	$5.30
3/4	.60	4	6.85
1	.70	5	10.25
1 1/4	.90	6	15.00
1 1/2	1.15	8	31.00
2	1.40	10	52.00
2 1/2	2.25	12	75.00
3	3.75	..	.....

Couplings

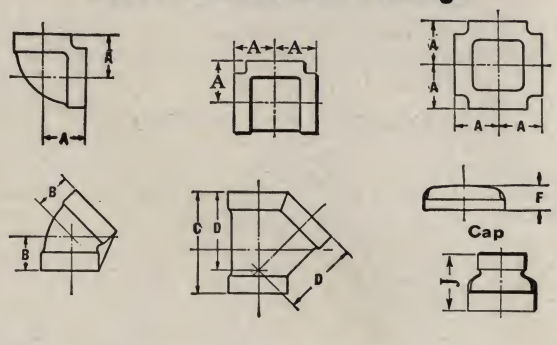
Size In.	R.H. Black Each	R.&L. Black Each
1	$.39	$.48
1 1/4	.50	.60
1 1/2	.66	.80
2	.83	1.00

Reducing Couplings

Size In.	Black Each
3/4 x 1/2	$.33
1 x 1/2	.39
1 x 3/4	.39
1 1/4 x 1	.50
1 1/2 x 1	.66
2 x 3/4	.83
2 x 1	.83
2 x 1 1/2	.83

For galvanized extra heavy fittings, double above prices

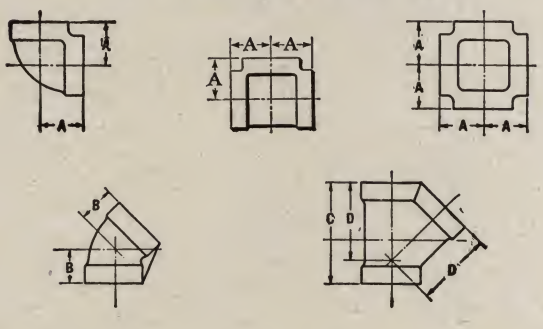
General Dimensions of Standard Cast Iron Screwed Fittings



Size Inches	Dimensions, Inches A	B	C	D	J	F
1/4	13/16	3/4	...	...	...	...
3/8	15/16	13/16	...	...	...	...
1/2	1 1/8	7/8	2 1/2	1 7/8	...	...
3/4	1 5/16	1	3	2 1/4	1 1/2	...
1	1 1/2	1 1/8	3 1/2	2 3/4	*1 7/8	...
1 1/4	1 3/4	1 5/16	4 1/4	3 1/4	2 1/8	...
1 1/2	1 15/16	1 7/16	4 7/8	3 13/16	2 1/4	...
2	2 1/4	1 11/16	5 3/4	4 1/2	2 7/16	...
2 1/2	2 11/16	1 15/16	6 3/4	5 3/16	2 5/8	...
3	3 1/8	2 3/16	7 7/8	6 1/8	2 7/8	...
3 1/2	3 7/16	2 3/8	8 7/8	6 7/8	3 1/8	...
4	3 3/4	2 5/8	9 3/4	7 5/8	3 3/8	2 1/16
5	4 1/2	3 1/16	11 5/8	9 1/4	3 7/8	2 3/8
6	5 1/8	3 7/16	13 7/16	10 3/4	4 3/8	2 5/8
8	6 9/16	4 1/4	16 15/16	13 5/8	5 1/4	3 1/8
10	8 1/16	5 3/16	20 11/16	16 3/4	6 3/16	3 5/8
12	9 1/2	6	24 1/8	19 5/8	7 1/8	4 1/4

Dimensions are subject to a slight variation and change without notice. *1x1/2-inch reducers are 1 11/16 inch end to end.

General Dimensions of Extra Heavy Cast Iron Screwed Fittings



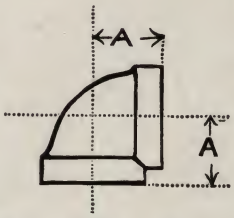
Size Inches	Dimensions, Inches A	B	C	D
1/4	1 1/4	...	...	....
3/8	1 3/8	...	...	....
1/2	1 1/4	1	...	....
3/4	1 7/16	1 1/8	...	....
1	1 5/8	1 5/16	4 1/4	3 1/4
1 1/4	1 15/16	1 1/2	4 7/8	3 13/16
1 1/2	2 1/4	1 11/16	5 3/4	4 1/2
2	2 1/2	2	6 3/4	5 3/16
2 1/2	2 15/16	2 1/4	7 7/8	6 1/8
3	3 3/8	2 1/2	8 7/8	6 7/8
3 1/2	3 3/4	2 9/16	....	....
4	4 1/8	2 13/16	10 5/8	8 1/2
5	4 7/8	3 3/16	13 7/16	10 3/4
6	5 5/8	3 11/16	15 1/4	12 1/4
8	7	4 5/8	18 1/8	14
10	8 5/8	4 7/8	....	.....
12	10	5 1/2	....	.....

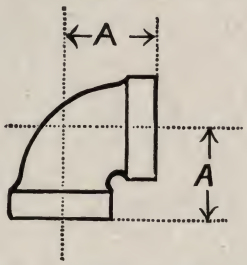
The above dimensions are subject to a slight variation and change without notice.

Cast Iron Drainage Fittings

90° Elbows

No. 201 Short Turn **No. 202 Long Turn**



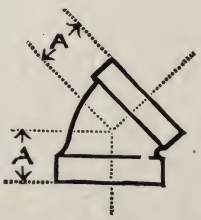


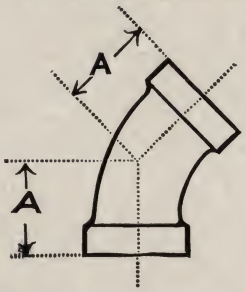
Size In.	Black Each	Galv. Each	A In.	Size In.	Black Each	Galv. Each	A In.
1¼	$.30	$.52	1⅞	1¼	$.35	$.60	2⅜
1½	.38	.67	2	1½	.42	.72	2½
1½x1¼	.57	1.00	2	2	.65	1.15	3 1/16
2	.57	1.00	2¼	2½	1.40	2.45	3 11/16
2x1½	.85	1.50	2⅛	3	1.75	3.10	5⅞
2½	1.20	2.10	2 13/16	4	2.75	4.80	6¾
3	1.45	2.55	3⅜	5	5.25	9.20	6⅛
4	2.30	4.00	3 15/16	6	7.50	13.15	7⅛
5	4.25	7.40	4⅝	8	19.00	33.25	11⅞
6	6.25	11.00	5 11/32	10	38.00	66.50	12¼
8	15.00	26.25	6½	12	57.50	100.00	13
10	31.00	54.00	7⅞		**Extra Long**		
12	47.50	83.00	9	1½	$.42	$.72	3 7/16
				2	.65	1.15	3⅞

90° elbows are tapped, pitched ¼ inch to the foot.

45° Elbows

No. 203 Short Turn **No. 204 Long Turn**





Size In.	Black Each	Galv. Each	A In.	Size In.	Black Each	Galv. Each	A In.
1¼	$.30	$.52	1 5/16	1¼	$.35	$.60	1¾
1½	.38	.67	1 7/16	1½	.42	.72	1⅞
2	.57	1.00	1⅝	2	.65	1.15	2¼
2½	1.20	2.10	1 11/16	2½	1.40	2.45	3
3	1.45	2.55	2 3/16	3	1.75	3.10	4⅝
4	2.30	4.00	2 7/16	4	2.75	4.80	4⅝
5	4.25	7.40	3 1/16	5	5.25	9.20	5 7/16
6	6.25	11.00	3	6	7.50	13.15	6
8	15.00	26.25	4¼	8	19.00	33.25	6¾
10	31.00	54.00	4 7/16	10	38.00	66.50	7½
12	47.50	83.00	5½	12	57.50	100.00	8¼

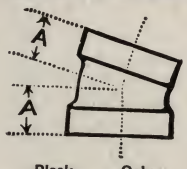
No. 208 60° Elbows

Size In.	Black Each	Galv. Each	A In.
1¼	$.30	$.52	1½
1½	.38	.67	1½
2	.57	1.00	1⅞
2½	1.20	2.10	2¼
3	1.45	2.55	2½
4	2.30	4.00	2⅞
5	4.25	7.40	3¼
6	6.25	11.00	3⅝
8	15.00	26.25	4¾
10	31.00	54.00	5¼

In ordering, specify whether black uncoated, black tar-coated or galvanized fittings are desired.

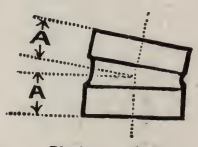
Cast Iron Drainage Fittings

No. 205 22½° Elbows



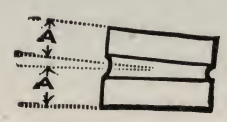
Size In.	Black Each	Galv. Each	A In.
1¼	$.30	$.52	1 1/16
1½	.38	.67	1¼
2	.57	1.00	1 7/16
2½	1.20	2.10	1½
3	1.45	2.55	1⅞
4	2.30	4.00	1⅞
5	4.25	7.40	2
6	6.25	11.00	2 3/16
8	15.00	26.25	2⅞
10	31.00	54.00	3¾

No. 206 11¼° Elbows



Size In.	Black Each	Galv. Each	A In.
1¼	$.30	$.52	1 1/16
1½	.38	.67	1¼
2	.57	1.00	1⅜
2½	1.20	2.10	1 7/16
3	1.45	2.55	1⅝
4	2.30	4.00	1 11/16
5	4.25	7.40	1⅞
6	6.25	11.00	2
8	15.00	26.25	2⅛
10	31.00	54.00	3

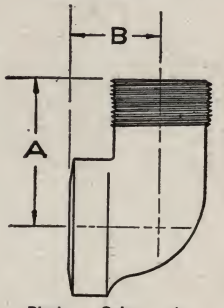
No. 207 5⅝° Elbows

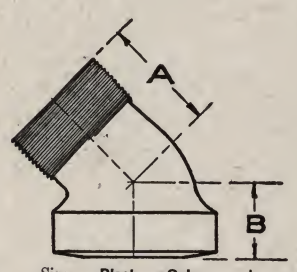


Size In.	Black Each	Galv. Each	A In.
1¼	$.30	$.52	1 1/16
1½	.38	.67	1 5/16
2	.57	1.00	1¼
2½	1.20	2.10	1½
3	1.45	2.55	1⅝
4	2.30	4.00	1 11/16
5	4.25	7.40	1¾
6	6.25	11.00	1⅞
8	15.00	26.25	2

Street Elbows

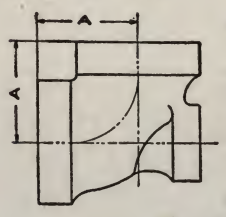
No. 262 90° **No. 263 45°**





Size In.	Black Each	Galv. Each	A In.	B In.	Size In.	Black Each	Galv. Each	A In.	B In.
1¼	$.35	$.60	2⅝	1¾	1¼	$.35	$.60	1¾	1 5/16
1½	.40	.70	3	1 13/16	1½	.40	.70	2	1¼
2	.60	1.10	3	2¼	2	.60	1.10	2¼	1⅝

No. 209 90° Elbows with Heel Outlet



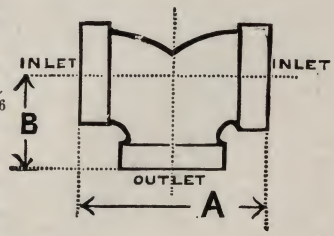
Size In.	Black Each	Galv. Each	A In.	B In.
3	$3.00	$5.25	...	...
4	3.85	6.75	3 13/16	3⅝

Size of outlet, 2 inches.

B is center of inlet to face of 2-inch heel outlet.

No. 214 3-Way Elbows

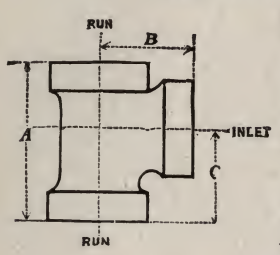
Size In.	Black Each	Galv. Each	A In.	B In.
1¼	$.75	$1.25	4¾	2⅜
1½	.85	1.50	5½	2¾
2	1.10	1.95	6¼	3⅛
2½	2.25	3.90	7⅜	3 11/16
3	3.00	5.25	10¾	5⅜
4	5.00	8.75	14¾	7⅜
4x3	5.50	9.65	9½	4 5/16
5	7.50	13.15	15	7½
5x4	8.25	14.50	11⅜	5 5/16
6	13.50	23.50	16¼	8⅛
6x4	15.00	26.25	12⅜	5 7/16



Inlets tapped, pitched ¼ inch to the foot.

In ordering, specify whether black uncoated, black tar-coated or galvanized fittings are desired.

Cast Iron Drainage Fittings
No. 222 Short Turn TY's

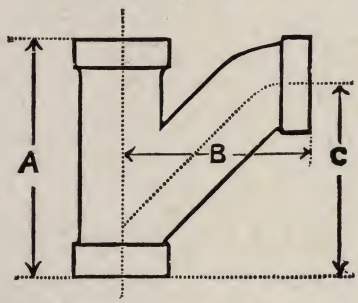


Size In.	Black Each	Galv. Each	A In.	B In.	C In.
1¼	$.45	$.80	3 13/16	2 3/16	2 3/16
1½	.57	1.00	4 5/16	2½	2 7/16
2	.85	1.50	5¾	3 3/16	3 3/16
2½	1.80	3.15	6⅝	3⅞	3¾
3	2.20	3.85	7¼	4¼	4¼
4	3.50	6.15	8¾	5 3/16	5 9/16
5	6.50	11.35	10¼	6 3/16	6 3/16
6	9.50	16.50	12	7⅛	7⅛
8	23.00	40.00	15¼	9⅛	9 5/16
10	47.00	82.00	19½	12¼	12¼

No. 224 Reducing Short Turn TY's

Size In.	Black Each	Galv. Each	A In.	B In.	C In.
1½x1¼	$.63	$1.10	4⅜	2¾	2¾
2 x1¼	.95	1.65	4 7/16	2 13/16	2 11/16
2 x1½	.95	1.65	4 15/16	3	2⅞
2 x1½x1½	.95	1.65	4½	2½	2¾
*2½x1¼	2.00	3.50	5⅛	3¼	3
2½x1½	2.00	3.50	5⅛	3¼	3
2½x2	2.00	3.50	5½	3 11/16	3⅛
3 x1½	2.40	4.20	5 1/16	3 5/16	2 15/16
3 x2	2.40	4.20	5¾	3⅝	3¼
*4 x1½	3.85	6.75	5 13/16	4 1/16	3⅜
4 x2	3.85	6.75	5 13/16	4 1/16	3⅜
*4 x2½	3.85	6.75	7⅜	4¾	4 5/16
4 x3	3.85	6.75	7⅜	4¾	4 5/16
5 x1½	7.15	12.50	5 9/16	4⅜	3 3/16
5 x2	7.15	12.50	6⅛	4½	3 11/16
5 x3	7.15	12.50	7¾	5 3/16	4½
5 x4	7.15	12.50	9¼	5 13/16	5¼
6 x2	10.50	18.50	6 5/16	5 3/16	3 11/16
*6 x3	10.50	18.50	9¼	5 15/16	5 7/16
6 x4	10.50	18.50	9¼	5 15/16	5 7/16
6 x5	10.50	18.50	10⅜	5 15/16	5 15/16
*8 x3	25.50	44.50	11⅝	7⅝	7½
8 x4	25.50	44.50	11⅝	7⅝	7½
*8 x5	25.50	44.50	12¾	8 1/16	8⅜
8 x6	25.50	44.50	12¾	8 1/16	8⅜
*10 x4	52.00	88.00	13⅜	9 15/16	8⅜
*10 x5	52.00	88.00	13⅜	9 15/16	8⅜
10 x6	52.00	88.00	13⅜	9 15/16	8⅜
*10 x8	52.00	88.00	19½	12¼	12¼

No. 223 Long Turn TY's



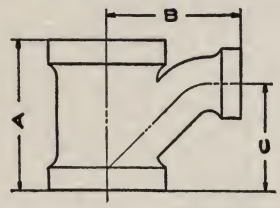
Size In.	Black Each	Galv. Each	A In.	B In.	C In.
1¼	$.57	$1.00	4¾	3⅝	3 7/16
1½	.70	1.22	5 7/16	4 3/16	3⅞
2	1.10	1.95	6½	5⅛	4⅝
2½	2.40	4.20	8¼	6 3/16	6 1/16
3	3.35	5.85	9	7	6½
4	6.00	10.50	10¾	8⅞	7⅝
5	9.50	16.50	13	10 3/16	9 5/16
6	20.00	35.00	14¼	10¾	10¼
8	40.00	70.00	17 7/16	13¼	11⅝
10	55.00	90.00	22¾	16 7/16	15⅜
12	80.00	140.00	26⅝	19	20

The inlet of TY's is tapped, pitched ¼ inch to the foot.

*Cast from nearest regular pattern.

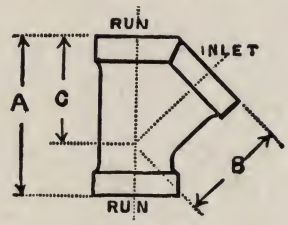
In ordering, specify whether black uncoated, black tar-coated or galvanized fittings are desired.

Cast Iron Drainage Fittings
No. 225 Reducing Long Turn TY's



Size In.	Black Each	Galv. Each	A In.	B In.	C In.
*1½x1¼	$.80	$1.40	5 7/16	4 3/16	3⅞
*2 x1¼	1.20	2.10	5 13/16	4½	4½
2 x1½	1.20	2.10	5 13/16	4½	4½
2½x1½	2.65	4.65	5¾	4½	4¼
*2½x2	2.65	4.65	8¼	6 7/16	6 1/16
3 x1½	3.75	6.55	5⅞	5¼	4 9/16
3 x2	3.75	6.55	6⅝	5½	4½
3 x2½	3.75	6.55	....	....	....
*4 x1½	6.60	11.55	7	6⅜	5⅛
4 x2	6.60	11.55	7	6⅜	5⅛
*4 x2½	6.60	11.55	9¼	7¾	6½
4 x3	6.60	11.55	9¼	7¾	6½
*5 x1½	10.50	18.50	7⅜	6 11/16	5⅝
5 x2	10.50	18.50	7⅜	6 11/16	5⅝
5 x3	10.50	18.50	9½	8 7/16	7
5 x4	10.50	18.50	11⅛	9 7/16	7 15/16
6 x2	22.00	38.50	6½	6¾	4 7/16
6 x3	22.00	38.50	8⅞	7¼	6¼
6 x4	22.00	38.50	11¼	9 13/16	8¼
6 x5	22.00	38.50	13	10 11/16	9 7/16
8 x3	44.00	77.00	8¾	9¼	5⅞
8 x4	44.00	77.00	10⅝	10	7¼
*8 x5	44.00	77.00	14¼	10¾	8¾
8 x6	44.00	77.00	14¼	10¾	8¾
*10 x4	60.00	102.00	16⅛	14⅛	11⅝
10 x6	60.00	102.00	16⅛	14⅛	11⅝
10 x8	60.00	102.00	17⅜	11¼	11⅛

No. 226 45° Y's



Size In.	Black Each	Galv. Each	A In.	B In.	C In.
1¼	$.52	$.90	5 3/16	3 7/16	3 7/16
1½	.65	1.15	5¼	3 7/16	3 7/16
2	.95	1.65	6¼	4⅛	4⅛
2½	2.10	3.70	8	5¼	5¼
3	2.65	4.65	8⅜	6	6
4	3.85	6.75	10⅞	7 11/16	7 11/16
5	7.10	12.50	11⅜	8⅜	8⅜
6	10.50	18.50	13¼	10	10
8	25.00	44.00	16½	12⅜	12⅜
10	52.00	91.00	20¼	15¼	15¼
12	75.00	130.00	24¼	19⅝	19⅝

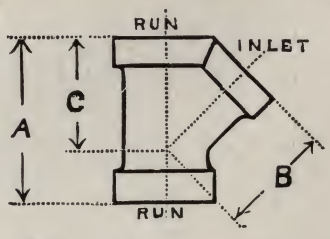
The inlet of TY's is tapped, pitched ¼ inch to the foot.

*Cast from nearest regular pattern.

In ordering, specify whether black uncoated, black tar-coated or galvanized fittings are desired.

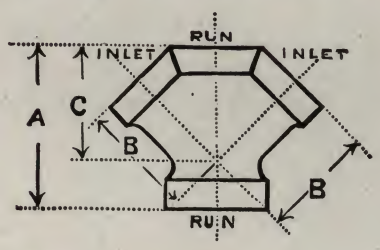
Cast Iron Drainage Fittings

No. 228 Reducing 45° Y's



Size In.	Black Each	Galv. Each	A In.	B In.	C In.
1½x1¼	$.72	$1.25	5¼	3 7/16	3 7/16
*2 x1¼x1½	1.05	1.85	5⅛	3⅝	3⅝
*2 x1½x1¼	1.05	1.85	5⅛	3⅝	3⅝
2 x1½x1½	1.05	1.85	5⅛	3⅝	3⅝
2 x1½x2	1.05	1.85	5⅞	3 15/16	4
*2 x1¼	1.05	1.85	5 15/16	4¼	4¼
†2 x1½	1.05	1.85	5 15/16	4¼	4¼
*2½x1½	2.30	4.00	6⅜	4¾	4⅝
2½x2	2.30	4.00	6⅜	4¾	4⅝
3 x1½	2.90	5.10	6⅝	5 1/16	4 11/16
3 x2	2.90	5.10	6¾	5¼	5⅛
*3 x2½	2.90	5.10	8⅜	6	6
4 x1½	4.25	7.40	7⅝	5⅝	5 7/16
4 x2	4.25	7.40	6⅝	5⅞	5⅝
4 x2½	4.25	7.40	7¼	5⅞	5¾
4 x3	4.25	7.40	8½	6⅝	6⅜
5 x2	7.80	13.65	7⅛	6¾	6
5 x3	7.80	13.65	8¾	7½	7⅛
5 x4	7.80	13.65	10 5/16	8	7⅞
6 x2	11.50	20.00	7	7½	6⅝
6 x3	11.50	20.00	8 13/16	8¼	7½
6 x4	11.50	20.00	10½	9	8⅞
6 x5	11.50	20.00	11½	9⅛	9
*8 x3	27.50	48.00	10⅜	10	8⅞
8 x4	27.50	48.00	10⅜	10	8⅞
8 x5	27.50	48.00	11⅜	10⅝	9¾
8 x6	27.50	48.00	14	12	11½
10 x4	57.00	97.00	11⅞	12⅝	11⅝
*10 x5	57.00	97.00	13⅞	13⅝	13
10 x6	57.00	97.00	13⅞	13⅝	13
*10 x8	57.00	97.00	20¼	15¼	15¼
12 x4	80.00	140.00	15	13⅜	11⅜
12 x5	80.00	140.00	15	14	12¼
12 x6	80.00	140.00	15	14⅝	13⅛

No. 227 Double 45° Y's



Size In.	Black Each	Galv. Each	A In.	B In.	C In.
1¼	$.90	$1.60	5 3/16	3 7/16	3 7/16
1½	1.00	1.75	5¼	3 7/16	3 7/16
2	1.45	2.55	6¼	4⅛	4⅛
2½	3.25	5.70	8	5¼	5¼
3	4.00	7.00	8⅜	6	6
4	5.75	10.00	9⅝	7	7
5	10.75	18.80	11⅜	8⅜	8⅜
6	16.00	28.00	13¼	10	10
8	38.00	66.50	16½	12⅜	12⅜
10	78.00	137.00	20¼	15¼	15¼

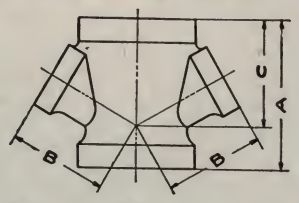
*Cast from nearest regular pattern.

†Also made with 1-inch cleanout on back.

In ordering, specify whether black uncoated, black tar-coated or galvanized fittings are desired.

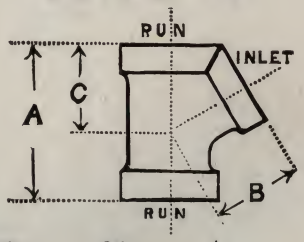
Cast Iron Drainage Fittings

No. 229 Reducing Double 45° Y's



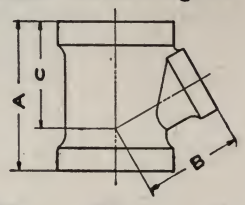
Size In.	Black Each	Galv. Each	A In.	B In.	C In.
1½x1¼	$1.10	$1.90	5¼	3 7/16	3 7/16
*2 x1¼	1.60	2.80	5 15/16	4¼	4¼
2 x1½	1.60	2.80	5 15/16	4¼	4¼
*2½x1½	3.60	6.30	6⅜	4¾	4⅝
2½x2	3.60	6.30	6⅜	4¾	4⅝
*3 x1½	4.40	7.70	6¾	5¼	5⅛
3 x2	4.40	7.70	6¾	5¼	5⅛
4 x2	6.35	11.00	6⅝	5 15/16	5¾
4 x3	6.35	11.00	8½	6⅝	6⅜
5 x2	11.75	20.50	7⅛	6⅝	5⅞
*5 x3	11.75	20.50	10 5/16	8	7⅞
5 x4	11.75	20.50	10 5/16	8	7⅞
*6 x2	17.50	30.50	8 13/16	8¼	7½
6 x3	17.50	30.50	8 13/16	8¼	7½
6 x4	17.50	30.50	10½	9	8⅞
*6 x5	17.50	30.50	13¼	10	10
8 x3	42.00	72.00	9	10	8⅞
8 x4	42.00	72.00	10⅜	10	8⅞
*8 x5	42.00	72.00	14⅛	12 5/16	11 13/16
8 x6	42.00	72.00	14⅛	12 5/16	11 13/16
*10 x8	86.00	146.00	20¼	15¼	15¼

No. 230 60° Y's



Size In.	Black Each	Galv. Each	A In.	B In.	C In.
1¼	$.52	$.90	4⅞	2¾	2¾
1½	.65	1.15	5¼	3 1/16	2⅞
2	.95	1.65	6¼	3⅜	3¾
2½	2.10	3.70	6½	4⅛	4⅛
3	2.65	4.65	7¼	4⅞	4⅞
4	3.85	6.75	8 7/16	6	5¾
5	7.10	12.50	10¼	7	7
6	10.50	18.50	11⅝	7⅞	7⅞

No. 232 Reducing 60° Y's

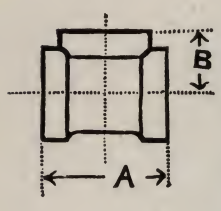


Size In.	Black Each	Galv. Each	A In.	B In.	C In.
*1½x1¼	$.72	$1.25	5¼	3 1/16	2⅞
*2 x1½	1.05	1.85	6¼	3⅜	3¾
*3 x2	2.90	5.10	7¼	4⅞	4⅞
4 x2	4.25	7.40	7 1/16	4⅝	5 1/16
*4 x3	4.25	7.40	8 7/16	6	5¾
*5 x4	7.80	13.65	10¼	7	7
6 x4	11.50	20.00	9¾	7¼	7
*6 x5	11.50	20.00	11⅝	7⅞	7⅞
8 x6	27.50	48.00	12⅜	9⅜	8 7/16

*Cast from nearest regular pattern.

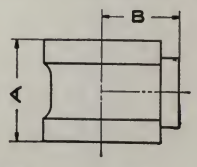
In ordering, specify whether black uncoated, black tar-coated or galvanized fittings are desired.

Cast Iron Drainage Fittings
No. 231 Tees



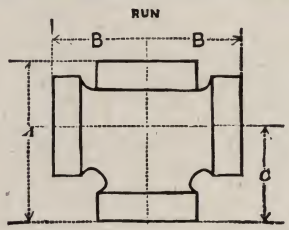
Size In.	Black Each	Galv. Each	A In.	B In.
1¼	$.45	$.80	3¾	1⅞
1½	.55	1.00	4⅛	2
2	.80	1.40	5⅛	2½
2½	1.50	2.50	5⅛	2 9/16
3	2.00	3.50	6⅜	3¼
4	3.25	5.70	8	4⅛
5	6.00	10.50	9⅛	4 9/16
6	8.75	15.25	10⅜	5 3/16
8	21.00	37.00	13	6 7/16
10	43.00	75.00	15	7½
12	60.00	100.00	18	9

No. 233 Reducing Tees



Size Inches	Black Each	Galv. Each	A In.	B In.
*1½x1¼	$.60	$1.10	4⅛	2
*2 x1¼	.90	1.60	4⅜	2½
2 x1½	.90	1.60	4⅜	2½
2½x1½	1.65	2.75	4½	2¾
2½x2	1.65	2.75	5 3/16	2¾
*3 x1½	2.20	3.85	5½	3⅛
3 x2	2.20	3.85	5½	3⅛
4 x2	3.60	6.30	4⅞	3⅝
4 x3	3.60	6.30	6¾	3⅞
*5 x2	6.60	11.55	6⅞	4 7/16
5 x3	6.60	11.55	6⅞	4 7/16
5 x4	6.60	11.55	8⅛	4 9/16
*6 x2	9.60	16.75	8⅛	5⅛
*6 x3	9.60	16.75	8⅛	5⅛
6 x4	9.60	16.75	8⅛	5⅛
*6 x5	9.60	16.75	10⅜	5 3/16
*8 x4	23.00	40.70	10¼	6
*8 x5	23.00	40.70	10¼	6
8 x6	23.00	40.70	10¼	6
*10 x5	47.30	82.50	11⅜	7 7/16
10 x6	47.30	82.50	11⅜	7 7/16
*10 x8	47.30	82.50	15	7½

No. 234 Short Turn Crosses



Size In.	Black Each	Galv. Each	A In.	B In.	C In.
1¼	$.70	$1.22	3 13/16	2 3/16	2 3/16
1½	.85	1.50	4 5/16	2½	2 7/16
2	1.30	2.30	5¾	3 3/16	3 3/16
2½	2.85	5.00	6⅝	3⅞	3¾
3	3.40	5.95	7¼	4 3/16	4 3/16
4	5.25	9.20	9⅛	5⅜	5⅝
5	9.50	16.50	10¼	6 3/16	6 3/16
6	14.00	24.50	12	7⅛	7⅛
8	36.00	62.00	15¼	9⅛	9 5/16

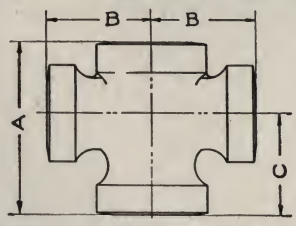
*Cast from nearest regular pattern.

Inlet (or branch) of tees is tapped, pitched ¼ inch to the foot.

Inlets of short turn crosses are tapped, pitched ¼ inch to the foot.

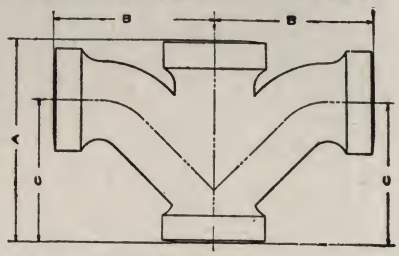
In ordering, specify whether black uncoated, black tar-coated or galvanized fittings are desired.

Cast Iron Drainage Fittings
No. 236 Reducing Short Turn Crosses



Size In.	Black Each	Galv. Each	A In.	B In.	C In.
1½x1¼	$.95	$1.65	4⅜	2¾	2¾
2 x1¼	1.50	2.60	4 7/16	2 13/16	2 11/16
2 x1½	1.50	2.60	4 15/16	3	2⅞
*2½x1½	3.15	5.50	5½	3 11/16	3⅛
2½x2	3.15	5.50	5½	3 11/16	3⅛
3 x1½	3.75	6.55	5 1/16	3 5/16	2 15/16
3 x2	3.75	6.55	5¾	3⅝	3¼
4 x2	5.75	10.00	5 15/16	4¼	3¼
4 x3	5.75	10.00	7⅜	4 15/16	4⅛
5 x2	10.50	18.50	6⅛	4½	3 11/16
*5 x3	10.50	18.50	9¼	5 13/16	5¼
5 x4	10.50	18.50	9¼	5 13/16	5¼
*6 x2	15.50	27.00	7⅞	5¾	4 9/16
6 x3	15.50	27.00	7⅞	5¾	4 9/16
6 x4	15.50	27.00	9¼	5 15/16	5 7/16
6 x5	15.50	27.00	10⅜	5 15/16	5 15/16
*8 x6	40.00	68.00	15¼	9⅛	9 5/16

No. 235 Long Turn Crosses



Size In.	Black Each	Galv. Each	A In.	B In.	C In.
1¼	$1.00	$1.75	4¾	3⅝	3 7/16
1½	1.10	1.95	5 7/16	4 3/16	3⅞
2	1.75	3.10	6½	5⅛	4⅝
2½	3.60	6.30	8¼	6 3/16	6 1/16
3	5.00	8.75	9	7	6½
4	9.00	15.75	10¾	8⅝	7⅝
5	14.00	24.50	13	10 3/16	9 5/16
6	30.00	52.50	14¼	10¾	10¼
8	60.00	105.00	17 7/16	13¼	11⅝
12	125.00	205.00	26⅝	19	20

No. 237 Reducing Long Turn Crosses

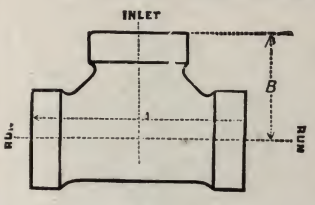
Size In.	Black Each	Galv. Each	A In.	B In.	C In.
*1½x1¼	$1.25	$2.25	5 7/16	4 3/16	3⅞
*2 x1¼	1.90	3.35	5 13/16	4½	4½
2 x1½	1.90	3.35	5 13/16	4½	4½
2½x1½	4.00	7.00	5¾	4½	4¼
*2½x2	4.00	7.00	8¼	6 3/16	6 1/16
3 x1½	5.50	9.65	5⅞	5¼	4 9/16
3 x2	5.50	9.65	6⅝	5½	4½
4 x2	10.00	17.50	7	6⅜	5⅛
*4 x3	10.00	17.50	10¾	8⅝	7⅝
5 x2	15.50	27.00	7⅜	6 11/16	5⅝
*5 x3	15.50	27.00	11⅛	9 7/16	7 15/16
5 x4	15.50	27.00	11⅛	9 7/16	7 15/16
*6 x2	33.00	58.00	8⅞	7¼	6¼
6 x3	33.00	58.00	8⅞	7¼	6¼
*6 x4	33.00	58.00	13	10 11/16	9 7/16
6 x5	33.00	58.00	13	10 11/16	9 7/16
8 x6	66.00	112.00	14¼	10¾	8¾
10 x6	77.00	130.00	16⅛	14⅛	11⅝

*Cast from nearest regular pattern.

Inlets are tapped, pitched ¼ inch to the foot.

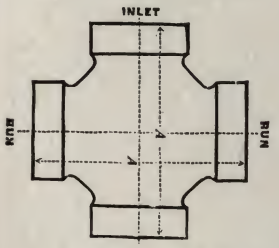
In ordering, specify whether black uncoated, black tar-coated or galvanized fittings are desired.

Cast Iron Drainage Fittings



No. 238 Basin Tees

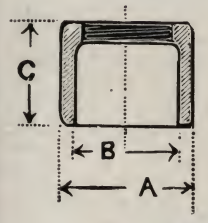
Size In.	Black Each	Galv. Each	A In.	B In.
1¼	$.60	$1.00	4¾	2⅜
1½	.70	1.22	5⅝	2 13/16
*1½x1¼	.77	1.35	5⅝	2 13/16
2	1.10	1.95	7	3½
2 x1½	1.20	2.10	6¾	3⅜
2½x1¼	2.00	3.50	5¾	3½



No. 239 Basin Crosses

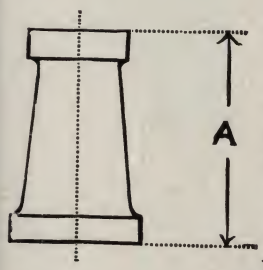
Size In.	Black Each	Galv. Each	A In.	B In.
1½	$1.50	$2.50	5⅝	5⅝
2	1.75	3.10	7	7
2x1½	1.95	3.40	6¾	6¾

No. 240-A Roof Connections



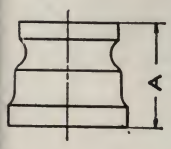
Size In.	Black Each	Galv. Each	A In.	B In.	C In.
1½	$1.10	$1.90	2⅞	2¼	3
2	1.15	2.00	3½	3	3½
3	1.20	2.10	5	4¼	3¾
4	1.50	2.60	5⅞	5⅛	5
5	2.00	3.50	7⅜	6½	6
6	4.25	7.40	8¼	7⅝	6⅞

No. 244 Increasers



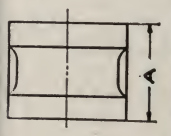
Size In.	Black Each	Galv. Each	A In.
2 x 1½	$1.75	$3.00	9
2½x 2	2.00	3.50	9
3 x 2	2.50	4.40	9
3 x 2½	2.50	4.40	9
4 x 2	3.75	6.55	9
4 x 3	3.75	6.55	9
5 x 2	5.50	9.65	9
5 x 3	5.50	9.65	9
5 x 4	5.50	9.65	9
6 x 4	6.50	11.35	9
6 x 5	6.50	11.35	9
8 x 4	15.00	26.25	9
8 x 6	15.00	26.25	9
10 x 6	20.00	35.00	9
10 x 8	20.00	35.00	9
12 x10	40.00	70.00	9

No. 246 Tucker Connections



Size In.	Black Each	Galv. Each	A In.
2	$.80	$1.40	3⅝
*2x1½	.80	1.40	3⅝
3	2.00	3.50	4⅝
4	3.25	5.70	6¼
5	6.00	10.50	6½
6	8.75	15.25	6 11/16
8	21.00	37.00	6 15/16
10	43.00	75.00	7⅛
12	80.00	140.00	9⅛

No. 256 Couplings



Size In.	Black Each	Galv. Each	A In.
1¼	$.70	$1.25	3
1½	.80	1.40	3 7/16
2	.90	1.60	3½
2½	1.20	2.10	4
3	1.50	2.60	4¼
4	2.50	3.40	4½
5	4.00	7.00	4¾
6	6.00	10.50	5¼

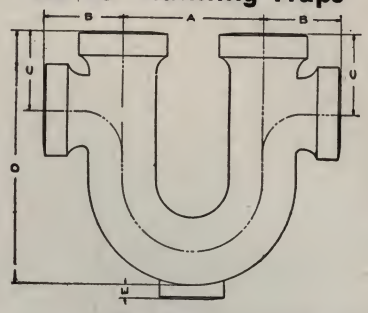
Inlets of basin tees and crosses are tapped, pitched ¼ inch to the foot.

*Cast from nearest regular pattern.

In ordering specify whether black uncoated, black tar-coated or galvanized fittings are desired.

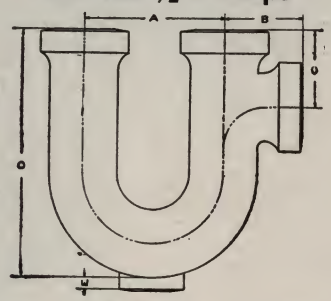
Cast Iron Drainage Fittings

No. 257 Running Traps



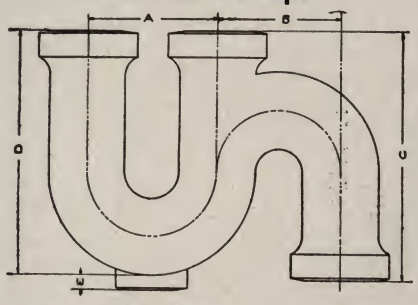
Size In.	Black Each	Galv. Each	Size Vent In.	Clean-out In.	Dimensions, Inches A	B	C	D	E
1¼	$2.40	$4.20	1¼	1	3	2⅞	1⅞	5⅝	¼
1½	2.70	4.70	1½	1	4	3 7/16	1 15/16	7	¼
2	3.30	5.75	2	1	4	3 1/16	2 9/16	7⅛	¼
3	5.50	9.50	3	2	6½	3¾	3½	11½	¼
4	9.75	17.00	4	3	7½	5¼	4	13¾	¼
5	24.50	43.00	4	4	8 7/16	6⅛	4¾	16	¼
6	33.50	58.50	6	4	10	6¾	5 11/16	19¼	¼
8	65.00	115.00	6	4	12⅜	9⅛	6⅝	23¾	¼
10	115.00	200.00	6	4	14¼	10 3/16	7½	27¼	¼
12	180.00	300.00	8	6	16½	11½	8½	31¾	⅜

No. 258 ½ S Traps



Size In.	Black Each	Galv. Each	Size Vent In.	Clean-out In.	Dimensions, Inches A	B	C	D	E
1¼	$1.55	$2.70	1¼	1	3	2⅞	1⅞	5⅝	¼
1½	1.70	3.00	1½	1	4	3 7/16	1 15/16	7	¼
2	2.20	3.85	2	1	4	3 1/16	2 9/16	7⅛	¼
3	5.00	8.75	3	2	6½	3¾	3½	11½	¼
4	10.00	17.50	4	3	7½	5¼	4	13¾	¼
5	21.50	37.50	4	4	8 7/16	6⅛	4¾	16	¼
6	32.50	57.00	6	4	10⅛	7	5¾	19 1/16	¼
8	55.00	95.00	6	4	12⅜	9⅛	6⅝	23¾	¼

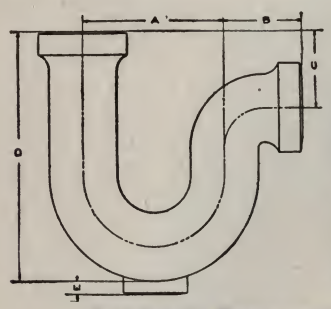
No. 260 S Traps



Size In.	Black Each	Galv. Each	Size Vent In.	Clean-out In.	Dimensions, Inches A	B	C	D	E
1½	$3.25	$5.75	1½	1	3	1⅞	5⅝	5⅜	⅜
2	4.00	7.00	2	1¼	4¼	4 1/16	8⅛	8	⅜
3	9.25	16.00	3	2	8 3/16	2 13/16	11	10⅝	⅜
4	14.00	24.00	4	2	10⅛	3 5/16	13¾	13	⅜

All traps are furnished with cleanout unless otherwise specified.

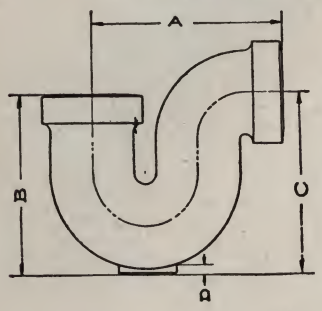
In ordering, specify whether black uncoated, black tar-coated or galvanized fittings are desired.



No. 261 ½ S Traps
No Vent

Size.in.	1½	2	3
Black ea.	$1.55	$2.00	$4.70
Galv. ea.	2.70	3.50	8.25
Cleanout ...in.	1	1	2
A+Bin.	7 7/16	8⅜	10⅜
C....in.	1 15/16	2⅝	3½
D...in.	7	9⅜	11½
E....in.	¼	¼	¼

711 Bath Basin and Sink Traps

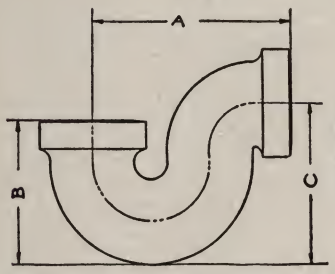


No. 265 Basin and Sink Traps

Size.in.	1½	2	3
Cleanout ...in.	1	1	1¼
A....in.	4¾	5½	7⅛
B....in.	4 13/16	5 5/16	8⅝
C....in.	4 13/16	5 5/16	7 7/16
D...in.	¼	¼	9/16

Made with or without cleanout.

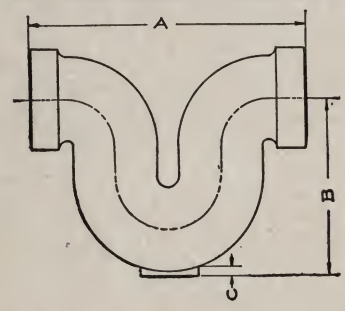
Prices on application.



No. 266 Bath Traps with Low Inlet

Size.....in.	1½	2
Cleanout....in.	1	1
A.....in.	5⅛	5⅞
B.....in.	4	4 7/16
C.....in.	4¾	5 1/16

Prices on application



No. 267 Running Traps for Bath Waste

Size.....in.	1½	2
Cleanout...in.	1	1
A.....in.	6¾	7⅞
B.....in.	4½	5 5/16
C.....in.	⅜	¼

Made with or without cleanout.

Prices on application.

NOTE.—Bushings or nuts, 1½x1⅜, 1½x1¼, 2x1¼ and 2x1½ furnished only when ordered with 711 traps.

In ordering, specify whether black uncoated, black tar-coated or galvanized fittings are desired.

Richmond 90° Hub Drainage Elbows

Recessed—For Screwed Pipe

No.....	68-A	68-B	68-C
Plain.....each	$.65	.70	1.05
Size.....in.	1¼x1¼	1½x1½	2x2
Tap.....in.	1¼	1½	2
Hub.....in.	1¼	1½	2
Approx. Weight.lb.	2¾	3	6

Richmond Hub Drainage Couplings

Recessed—For Screwed Pipe

No.....	71-A	71-B	71-C
Plain.....each	$.80	.90	1.20
Size.....in.	1¼x1¼	1½x1¼	2x2
Male Thread...in.	1¼	1½	2
Hub.....in.	1¼	1½	2
Approx. Weight.lb.	2½	3	3½

Richmond Hub Drainage Fittings

Recessed—For Screwed Pipe

No. 46

No. 51

***Long Sweep 90° Hub Drainage TY Branches**

No.....	46-A	46-B	46-C
Plain.....each	$1.10	1.75	1.75
Size.....inches	1½x1½x1½	2x1½	2x2
Bottom Tap.....inches	1½	2	2
Hub.....inches	1½	2	2
Branch Tap.....inches	1½	1½	2
Approximate Weight.....pounds	5½	7¼	8½

***Long Sweep 90° Hub Drainage Double TY Branches**

No.....	51-A	51-B	51-C
Plain.....each	$1.50	2.20	2.20
Size.....inches	1½x1½	2x1½	2x2
Bottom Tap.....inches	1½	2	2
Hub.....inches	1½	2	2
Branch Tap.....inches	1½	1½	2
Approximate Weight.....pounds	7¼	9	12

*Tapped with fall of ¼ inch per foot.

Richmond Special Tapped Drainage Fittings

Recessed—For Screwed Pipe

No. 31

No. 35

***Long Sweep Drainage TY Branches**

No.....	31-A	31-B
Plain.....each	$1.50	1.50
Size.....inches	2x1½x2	2x1½x1½
Bottom Tap.....inches	2	2
Top Tap.....inches	1½	1½
Branch Tap.....inches	2	1½
Approx. Weight.....pounds	6¾	5

***Drainage Y Branches**

No.....	35-A	35-B
Plain.....each	$1.20	1.20
Size.....inches	2x1½x1½	2x1½x2
Bottom Tap.....inches	2	2
Top Tap.....inches	1½	1½
Branch Tap.....inches	1½	2
Approx. Weight.....pounds	4½	5½

*Branches tapped with fall of ¼ inch per foot.

Richmond Hub Drainage Vent Fittings

Recessed—For Screwed Pipe

No.	Plain Each	Size Inches	Tapped Inches	Hub Inches	Approx. Weight Pounds
69-A	$.80	1¼x1¼	1¼	1¼	3
69-B	.80	1½x1½	1½	1½	3¼
69-C	1.00	1½x2	1½	2	4
69-D	1.00	2 x2	2	2	4¼
69-E	1.30	2½x2½	2½	2½	7
69-F	1.50	3 x3	3	3	7½
69-G	2.50	4 x4	4	4	17¾
69-H	4.50	5 x5	5	5	26
69-J	6.30	6 x6	6	6	34

Sizes above 2 inches supplied with expansion gaskets.

125-Pound Cast Iron Flanged Fittings

1 to 24-Inch, 125 Pounds Steam Working Pressure
1 to 12-Inch, 175 Pounds Cold Water, Oil, or Gas Non-Shock Working Pressure
14 to 24-Inch, 150 Pounds Cold Water, Oil, or Gas Non-Shock Working Pressure

American Standard.—Dimensions and drilling of these fittings conform to the 125-Pound American Cast Iron Flanged Fitting Standard (B16a–1928). Although the American Standard rates fittings 1 to 48-inch for 125 pounds steam working pressure, 125-pound fittings larger than 24-inch are made to order of a design suitable for the pressure intended, retaining American Standard center to face dimensions, flange dimensions, and drilling.

Facing and Drilling.—Flanges are plain faced with a smooth tool finish. They are drilled unless so ordered. Bolt holes on drilled fittings straddle the center lines unless otherwise ordered, in which case a sketch should accompany the order. For bolts smaller than 1¾-inch diameter bolt holes are drilled ⅛ inch larger than the diameter of the bolts; for bolts 1¾-inch diameter and larger, bolt holes are drilled ¼ inch larger than the diameter of the bolts.

Side Outlet Elbows.—All openings are on the intersecting center lines. Reducing side outlet elbows are regularly made reduced only on the side outlet. Other reductions are made to order only at an advanced price; orders should be accompanied by a sketch showing the size and location of all openings.

Double Branch Elbows.—In describing double branch elbows the branches are named first and then the outlet. Reducing double branch elbows are regularly made reduced only on the branches with both branches the same size. Other reductions are made to order only at an advanced price; orders should be accompanied by a sketch showing the size and location of all openings.

Base Elbows.—The base on base elbows is not faced or drilled unless so ordered. Round bases, when drilled, will be drilled to the template of the flange corresponding to the size of the supporting pipe.

Special Angle Elbows.—Elbows from 1 degree to 45 degrees have the same center to face dimensions as 45-degree elbows; 46 degrees to 90 degrees have the same center to face dimensions as 90-degree elbows. These fittings are made to order only.

Single Sweep Tees.—Single sweep tees with the outlet larger than the run are made to order only. Prices and dimensions upon application.

Double Sweep Tees.—Double sweep tees reduced on the run are made to order only. Prices and dimensions upon application. Double sweep tees with the outlet larger than the run can be made with only a reasonable increase in the size of the outlet.

Side Outlet Tees.—Orders for reducing side outlet tees should be accompanied by a sketch showing the size and location of all openings.

Base Tees.—Base tees are made to order only. Prices upon application. Dimensions of the base are the same as for base elbows.

45° Laterals.—Reducing 45° laterals with the outlet larger than the run are entirely special. Prices and dimensions upon application.

Dimensions of Reducing Fittings.—Center to face dimensions of reducing elbows, tees, crosses, and 45° laterals are the same as for the straight size corresponding to the size of the largest opening, with the following exception: In sizes 18-inch and larger reducing tees, crosses, and 45° laterals are made in 2 lengths depending upon the size of the outlet, known as Long Body and Short Body. Face to face dimension of reducers is governed by the size of the larger opening regardless of the size of the smaller opening.

125-Pound Cast Iron Flanged Fittings

90° Elbows

No. 500

Flanges are plain faced, with a smooth tool finish.
Sizes 16 inches and smaller not spot faced; when ordered, there is an extra of 10 cents per hole. Sizes 18 inches and larger, regularly spot faced.
Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
1	$3.00	$3.60	$2.40	4¼	3½
1¼	3.00	3.60	2.40	4⅝	3¾
1½	3.00	3.60	2.40	5	4
2	3.00	3.60	2.40	6	4½
2½	3.15	3.75	2.50	7	5
3	3.45	4.15	2.75	7½	5½
3½	4.05	4.90	3.25	8½	6
4	4.50	5.50	3.65	9	6½
5	6.25	7.25	4.85	10	7½
6	7.60	8.90	6.00	11	8
8	12.00	13.60	9.00	13½	9
10	19.00	21.70	14.50	16	11
12	28.00	31.00	21.00	19	12
14	41.50	45.25	30.00	21	14
16	54.50	59.50	40.00	23½	15
18	71.00	77.00	.....	25	16½
20	90.00	97.00	.....	27½	18
24	140.00	150.00	.....	32	22

45° Elbows

No. 501

Flanges are plain faced, with a smooth tool finish.
Sizes 16 inches and smaller not spot faced; when ordered, there is an extra of 10 cents per hole. Sizes 18 inches and larger, regularly spot faced.
Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
1	$3.30	$3.90	$2.40	4¼	1¾
1¼	3.30	3.90	2.40	4⅝	2
1½	3.30	3.90	2.40	5	2¼
2	3.30	3.90	2.40	6	2½
2½	3.50	4.10	2.50	7	3
3	3.80	4.50	2.75	7½	3
3½	4.50	5.35	3.25	8½	3½
4	5.00	6.00	3.65	9	4
5	6.90	7.90	4.85	10	4½
6	8.35	9.65	6.00	11	5
8	12.60	14.20	9.00	13½	5½
10	20.00	22.70	14.50	16	6½
12	29.50	32.50	21.00	19	7½
14	41.50	45.25	30.00	21	7½
16	54.50	59.50	40.00	23½	8
18	71.00	77.00	.....	25	8½
20	90.00	97.00	.....	27½	9½
24	140.00	150.00	.....	32	11

Larger sizes made to order; prices on application.

125-Pound Cast Iron Flanged Fittings

Reducing Taper Elbows

No. 502

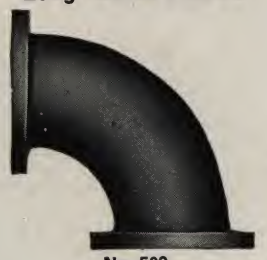
Carry the same dimensions, center to face, as regular elbows of largest straight size. Plain faces. Sizes 16 inches and smaller not spot faced; when ordered, there is an extra of 10 cents per hole. Sizes 18 inches and larger, regularly spot faced.

Bolt holes drilled 1/8 inch larger than bolts. Size of all fittings, indicates i.d. of ports. Flanged fittings furnished face and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
1½x 1¼	$6.00	$6.60	$2.40	5 x 4⅝	4
1 x 1¼	6.00	6.60	2.40	6 x 4⅝	4½
2 x 1½	6.00	6.60	2.40	6 x 5	4½
2½x 1¼	6.30	6.90	2.50	7 x 4⅝	5
2½x 1½	6.30	6.90	2.50	7 x 5	5
2½x 2	6.30	6.90	2.50	7 x 6	5
3 x 1¼	6.90	7.60	2.75	7½x 4⅝	5½
3 x 1½	6.90	7.60	2.75	7½x 5	5½
3 x 2	6.90	7.60	2.75	7½x 6	5½
3 x 2½	6.90	7.60	2.75	7½x 7	5½
3½x 1½	8.10	8.95	3.25	8½x 5	6
3½x 2	8.10	8.95	3.25	8½x 6	6
3½x 2½	8.10	8.95	3.25	8½x 7	6
3½x 3	8.10	8.95	3.25	8½x 7½	6
4 x 1½	9.00	10.00	3.65	9 x 5	6½
4 x 2	9.00	10.00	3.65	9 x 6	6½
4 x 2½	9.00	10.00	3.65	9 x 7	6½
4 x 3	9.00	10.00	3.65	9 x 7½	6½
4 x 3½	9.00	10.00	3.65	9 x 8½	6½
5 x 2	12.50	13.50	4.85	10 x 6	7½
5 x 2½	12.50	13.50	4.85	10 x 7	7½
5 x 3	12.50	13.50	4.85	10 x 7½	7½
5 x 3½	12.50	13.50	4.85	10 x 8½	7½
5 x 4	12.50	13.50	4.85	10 x 9	7½
6 x 2	15.25	16.55	6.00	11 x 6	8
6 x 2½	15.25	16.55	6.00	11 x 7	8
6 x 3	15.25	16.55	6.00	11 x 7½	8
6 x 3½	15.25	16.55	6.00	11 x 8½	8
6 x 4	15.25	16.55	6.00	11 x 9	8
6 x 5	15.25	16.55	6.00	11 x10	8
8 x 3	24.00	25.60	9.00	13½x 7½	9
8 x 3½	24.00	25.60	9.00	13½x 8½	9
8 x 4	24.00	25.60	9.00	13½x 9	9
8 x 5	24.00	25.60	9.00	13½x10	9
8 x 6	24.00	25.60	9.00	13½x11	9
10 x 4	38.00	40.70	14.50	16 x 9	11
10 x 5	38.00	40.70	14.50	16 x10	11
10 x 6	38.00	40.70	14.50	16 x11	11
10 x 8	38.00	40.70	14.50	16 x13½	11
12 x 4	56.00	59.00	21.00	19 x 9	12
12 x 5	56.00	59.00	21.00	19 x10	12
12 x 6	56.00	59.00	21.00	19 x11	12
12 x 8	56.00	59.00	21.00	19 x13½	12
12 x10	56.00	59.00	21.00	19 x16	12
14 x 6	70.00	73.75	30.00	21 x11	14
14 x 8	70.00	73.75	30.00	21 x13½	14
14 x10	70.00	73.75	30.00	21 x16	14
14 x12	70.00	73.75	30.00	21 x19	14
16 x 8	90.00	95.00	40.00	23½x13½	15
16 x10	90.00	95.00	40.00	23½x16	15
16 x12	90.00	95.00	40.00	23½x19	15
16 x14	90.00	95.00	40.00	23½x21	15
18 x10	105.00	111.00	.....	25 x16	16½
18 x12	105.00	111.00	.....	25 x19	16½
18 x14	105.00	111.00	.....	25 x21	16½
18 x16	105.00	111.00	.....	25 x23½	16½
20 x12	120.00	127.00	.....	27½x19	18
20 x14	120.00	127.00	.....	27½x21	18
20 x16	120.00	127.00	.....	27½x23½	18
20 x18	120.00	127.00	.....	27½x25	18
24 x12	187.00	197.00	.....	32 x19	22
24 x14	187.00	197.00	.....	32 x21	22
24 x16	187.00	197.00	.....	32 x23½	22
24 x18	187.00	197.00	.....	32 x25	22
24 x20	187.00	197.00	.....	32 x27½	22

125-Pound Cast Iron Flanged Fittings

Long Radius Elbows



No. 503

All 125-pound fittings have plain faces. Bolt holes will be drilled 1/8 inch larger than diameter of body.

Size of all fittings scheduled indicates inside diameter of ports.

Size 16 inches and smaller not spot faced; when ordered, there is an extra of 10 cents per hole. Sizes 18 inches and larger, regularly spot faced.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diam. Flanges Inches	Center to Face Inches
1	$5.00	$5.90	$3.60	4¼	5
1¼	5.00	5.90	3.60	4⅝	5½
1½	5.00	5.90	3.60	5	6
2	5.00	5.90	3.60	6	6½
2½	5.25	6.15	3.75	7	7
3	5.75	6.85	4.15	7½	7¾
3½	6.75	8.00	4.90	8½	8½
4	7.50	9.00	5.50	9	9
5	10.50	12.00	7.25	10	10¼
6	12.65	14.60	9.00	11	11½
8	20.00	22.40	13.50	13½	14
10	31.50	35.50	22.00	16	16½
12	46.50	51.00	31.00	19	19
14	69.00	74.50	45.00	21	21½
16	91.00	98.50	60.00	23½	24
18	118.00	127.00	.....	25	26½
20	150.00	160.00	.....	27½	29
24	235.00	250.00	.....	32	34

Larger sizes made to order; prices on application.

Round Base Elbows

The measurement across the flat edges of square base flange is the same as the diameter of the round base flange.

No. 504

All 125-pound fittings have plain faces. Bolt holes will be drilled 1/8 inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Sizes 16 inches and smaller not spot faced; when ordered, there is an extra of 10 cents per hole. Sizes 18 inches and larger, regularly spot faced.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	For Facing and Drilling Base Flange Each	Extra for Galv. Each	Diameter *Flanges Inches	Center to Face Inches	Diam. Base Flange Inches
4	$9.00	$10.00	$3.00	$5.50	9	6½	6
5	12.50	13.50	3.50	7.25	10	7½	7
6	15.25	16.55	3.50	9.00	11	8	7
8	24.00	25.60	5.00	13.50	13½	9	9
10	38.00	40.70	5.00	22.00	16	11	9
12	56.00	59.00	7.50	31.00	19	12	11
14	70.00	73.75	7.50	45.00	21	14	11
16	90.00	95.00	7.50	60.00	23½	15	11
18	105.00	111.00	12.00	.....	25	16½	13½
20	120.00	127.00	12.00	.....	27½	18	13½
24	190.00	200.00	12.00	.....	32	22	13½

*Port openings only, not base flange.

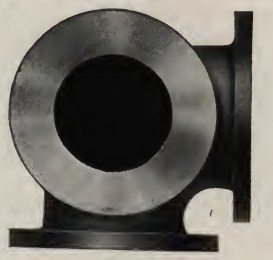
Base Tees

Furnished on special order; prices on application.

125-Pound Cast Iron Flanged Fittings

Side Outlet Elbows

Straight



No. 505

All 125-pound fittings have plain faces. Bolt holes drilled ⅛ inch larger in diameter than diameter of bolts.

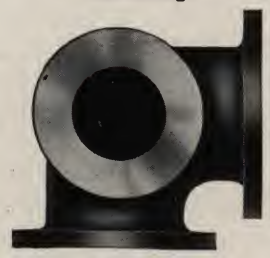
Size of all fittings scheduled indicates inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
4	$26.50	$28.00	$5.50	9	6½
5	28.50	30.00	7.25	10	7½
6	33.00	35.00	9.00	11	8
8	47.50	50.00	13.50	13½	9
10	76.00	80.00	22.00	16	11
12	100.50	105.00	31.00	19	12
14	129.50	135.00	45.00	21	14
16	152.50	160.00	60.00	23½	15

Reducing



No. 506

The dimensions of reduced flanged fittings are always regulated by the reductions of the outlet or branch.

Side outlet elbows, whether straight or reducing sizes, carry same dimensions center to face and face to face as regular tees having same reductions.

Side outlet elbows, whether straight or reducing, are furnished with all openings on intersecting center lines.

Bolt holes will not be spot faced unless so ordered, for which an extra charge will be made.

All 125-pound fittings have plain faces. Bolt holes drilled ⅛ inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Orders for reducing fittings not carried in stock can be filled by using reducing companion flanges. Orders should specify—reduce with flanges if necessary.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
4	$29.50	$31.00	$5.50	9	6½
5	31.50	33.00	7.25	10	7½
6	36.00	38.00	9.00	11	8
8	52.50	55.00	13.50	13½	9
10	84.00	88.00	22.00	16	11
12	110.50	115.00	31.00	19	12
14	144.50	150.00	45.00	21	14
16	167.50	175.00	60.00	23½	15

Larger sizes made to order; prices on application.

125-Pound Cast Iron Flanged Fittings

Double Branch Elbows

Straight

No. 507

All 125-pound fittings have plain faces. Bolt holes drilled ⅛ inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
4	$28.50	$30.00	$5.50	9	6½
5	36.00	37.50	7.25	10	7½
6	38.00	40.00	9.00	11	8
8	47.50	50.00	13.50	13½	9
10	66.00	70.00	22.00	16	11
12	90.50	95.00	31.00	19	12
14	119.50	125.00	45.00	21	14
16	142.50	150.00	60.00	23½	15

Reducing

Reducing on the Branches Same Size

No. 508

The dimensions of reduced flanged fittings are always regulated by the reductions of the outlet or branch.

Double branch elbows, whether straight or reducing, carry same dimensions center to face and face to face as regular straight size elbows and tees.

Prices given for reducing elbows are for fittings reducing on the branches same size. If fittings are wanted with two branches of two different sizes, or reducing on the inlet, they will be furnished on special order at a special price.

Bolt holes will not be spot faced unless so ordered, for which an extra charge will be made.

All 125-pound fittings have plain faces. Bolt holes drilled ⅛ inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Orders for reducing fittings not carried in stock can be filled by using reducing companion flanges. Orders should specify—reduce with flanges if necessary.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
4	$31.50	$33.00	$5.50	9	6½
5	39.50	41.00	7.25	10	7½
6	42.00	44.00	9.00	11	8
8	52.50	55.00	13.50	13½	9
10	73.50	77.50	22.00	16	11
12	100.50	105.00	31.00	19	12
14	132.50	138.00	45.00	21	14
16	157.50	165.00	60.00	23½	15

Larger sizes made to order; prices on application.

125-Pound Cast Iron Flanged Fittings

Tees

No. 509, Straight

No. 510, Reducing

All reducing tees, 16 inches and smaller, take the same center to face dimensions as straight size tees of larger port.

Fittings, reducing on the run only, the long body pattern will always be used, except double sweep tees, on which the reduced end is always longer than the regular fittings. Dimensions on request.

Bullheads, or tees having outlet larger than the run, will be the same length center to face of all openings as a tee with all openings of the size of the outlet.

All 125-pound fittings have plain faces.

Bolt holes will be drilled ⅛ inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Sizes 16 inches and smaller not spot faced; when ordered, there is an extra of 10 cents per hole. Sizes 18 inches and larger, regularly spot faced.

Furnished faced and drilled, unless ordered faced only.

Straight

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
1	$ 4.35	$ 5.25	$3.60	4¼	3½
1¼	4.35	5.25	3.60	4⅝	3¾
1½	4.35	5.25	3.60	5	4
2	4.35	5.25	3.60	6	4½
2½	4.55	5.45	3.75	7	5
3	5.00	6.10	4.15	7½	5½
3½	5.85	7.10	4.90	8½	6
4	6.50	8.00	5.50	9	6½
5	9.10	10.60	7.25	10	7½
6	11.00	12.95	9.00	11	8
8	17.40	19.80	13.50	13½	9
10	27.50	31.50	22.00	16	11
12	40.50	45.00	31.00	19	12
14	60.00	65.50	45.00	21	14
16	79.00	86.50	60.00	23½	15
18	103.00	112.00	.....	25	16½
20	130.00	140.00	.....	27½	18
24	203.00	218.00	.....	32	22

Reducing

1¼	$5.00	$5.90	$3.60	4⅝	3¾
1½	5.00	5.90	3.60	5	4
2	5.00	5.90	3.60	6	4½
2½	5.25	6.15	3.75	7	5
3	5.75	6.85	4.15	7½	5½
3½	6.75	8.00	4.90	8½	6
4	7.50	9.00	5.50	9	6½
5	10.50	12.00	7.25	10	7½
6	12.65	14.60	9.00	11	8
8	20.00	22.40	13.50	13½	9
10	31.50	35.50	22.00	16	11
12	46.50	51.00	31.00	19	12
14	69.00	74.50	45.00	21	14
16	91.00	98.50	60.00	23½	15
18	118.00	127.00	.....	25	16½
20	150.00	160.00	.....	27½	18
24	233.00	248.00	.....	32	22

Larger sizes made to order; prices on application.

125-Pound Cast Iron Flanged Fittings

Single Sweep Tees

No. 511, Straight

No. 512, Reducing

All reducing tees, 16 inches and smaller, take same center to face dimensions as straight size tees of largest port. All tees reducing on run only take same dimensions center to face as largest straight size.

Reducing single sweep tees are made to order only. Single sweep tees with outlet larger than run are special; prices and dimensions upon application.

All 125-pound fittings have plain faces.

Bolt holes are drilled ⅛ inch larger in diameter than diameters of bolts.

Sizes of all fittings scheduled indicate the inside diameters of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Straight

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
2	$5.00	$5.90	$3.60	6	4½
2½	5.25	6.15	3.75	7	5
3	5.75	6.85	4.15	7½	5½
3½	6.75	8.00	4.90	8½	6
4	7.50	9.00	5.50	9	6½
5	10.50	12.00	7.25	10	7½
6	12.65	14.60	9.00	11	8
8	20.00	22.40	13.50	13½	9
10	31.50	35.50	22.00	16	11
12	46.50	51.00	31.00	19	12
14	69.00	74.50	45.00	21	14
16	91.00	98.50	60.00	23½	15

Reducing

Reducing in Run or Branch

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
2½	$6.00	$6.90	$3.75	7	5
3	6.60	7.70	4.15	7½	5½
3½	7.75	9.00	4.90	8½	6
4	8.65	10.15	5.50	9	6½
5	12.00	13.50	7.25	10	7½
6	14.50	16.45	9.00	11	8
8	23.00	25.40	13.50	13½	9
10	36.00	40.00	22.00	16	11
12	53.50	58.00	31.00	19	12
14	79.00	84.50	45.00	21	14
16	105.00	112.50	60.00	23½	15

Larger sizes made to order; prices on application.

125-Pound Cast Iron Flanged Fittings

Double Sweep Tees

No. 513, Straight

No. 514, Reducing

All reducing tees 16 inches and smaller reducing on outlet, take same center to face dimensions as straight size tees of largest port.

Double sweep tees reduced on the run are made to order only. Prices and dimensions on application.

All 125-pound fittings have plain faces.

Bolt holes are drilled ⅛ inch larger in diameter than diameter of bolts. Sizes of all fittings scheduled indicate the inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Straight

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
2	$5.00	$5.90	$3.60	6	4½
2½	5.25	6.15	3.75	7	5
3	5.75	6.85	4.15	7½	5½
3½	6.75	8.00	4.90	8½	6
4	7.50	9.00	5.50	9	6½
5	10.50	12.00	7.25	10	7½
6	12.65	14.60	9.00	11	8
8	20.00	22.40	13.50	13½	9
10	31.50	35.50	22.00	16	11
12	46.50	51.00	31.00	19	12
14	69.00	74.50	45.00	21	14
16	91.00	98.50	60.00	23½	15

Reducing

Reducing in Branch Only

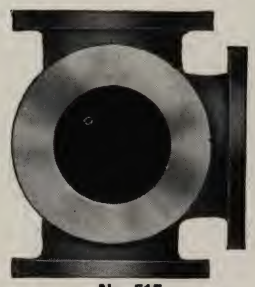
Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
2½	$6.00	$6.90	$3.75	7	5
3	6.60	7.70	4.15	7½	5½
3½	7.75	9.00	4.90	8½	6
4	8.65	10.15	5.50	9	6½
5	12.00	13.50	7.25	10	7½
6	14.50	16.45	9.00	11	8
8	23.00	25.40	13.50	13½	9
10	36.00	40.00	22.00	16	11
12	53.50	58.00	31.00	19	12
14	79.00	84.50	45.00	21	14
16	105.00	112.50	60.00	23½	15

Larger sizes made to order; prices on application.

125-Pound Cast Iron Flanged Fittings

Side Outlet or 4-Way Tees

Straight



No. 515

All 125-pound fittings have plain faces. Bolt holes drilled ⅛ inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
4	$31.00	$33.00	$7.25	9	6½
5	35.00	37.00	9.75	10	7½
6	42.25	45.00	12.00	11	8
8	56.75	60.00	18.00	13½	9
10	84.50	90.00	29.00	16	11
12	114.00	120.00	42.00	19	12
14	142.50	150.00	60.00	21	14
16	170.00	180.00	80.00	23½	15

Reducing

No. 516

The dimensions of reduced flanged fittings are always regulated by the reductions of the outlet or branch.

Fittings reducing on the run only, the long body pattern will always be used.

Size outlet tees, whether straight or reducing, carry same dimensions center to face and face to face as regular tees having same reductions.

Bolt holes will not be spot faced unless so ordered, for which an extra charge will be made.

All 125-pound fittings have plain faces. Bolt holes drilled ⅛ inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

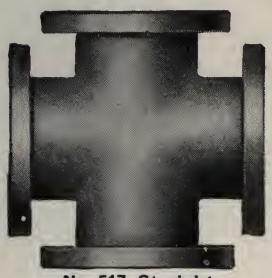
Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
4	$34.00	$36.00	$7.25	9	6½
5	39.00	41.00	9.75	10	7½
6	47.25	50.00	12.00	11	8
8	62.75	66.00	18.00	13½	9
10	94.50	100.00	29.00	16	11
12	126.00	132.00	42.00	19	12
14	157.00	165.00	60.00	21	14
16	190.00	200.00	80.00	23½	15

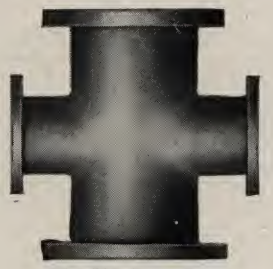
Larger sizes made to order; prices on application.

125-Pound Cast Iron Flanged Fittings

Crosses



No. 517, Straight



No. 518, Reducing

All 125-pound fittings have plain faces.

Bolt holes will be drilled 1/8 inch larger than diameter of bolts.

Size of all fittings scheduled indicated inside diameter of ports.

Sizes 16 inches and smaller not spot faced; when ordered, there is an extra of 10 cents per hole. Sizes 18 inches and larger, regularly spot faced.

Furnished faced and drilled, unless ordered faced only.

Straight

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
1	$6.75	$7.95	$4.80	4¼	3½
1¼	6.75	7.95	4.80	4⅝	3¾
1½	6.75	7.95	4.80	5	4
2	6.75	7.95	4.80	6	4½
2½	6.95	8.15	5.00	7	5
3	7.65	9.05	5.50	7½	5½
3½	9.00	10.70	6.50	8½	6
4	10.00	12.00	7.25	9	6½
5	13.75	15.75	9.75	10	7½
6	16.75	19.25	12.00	11	8
8	26.50	29.75	18.00	13½	9
10	42.00	47.50	29.00	16	11
12	61.50	67.50	42.00	19	12
14	91.00	98.50	60.00	21	14
16	120.00	130.00	80.00	23½	15
18	157.00	169.00	.....	25	16½
20	198.00	212.00	.....	27½	18
24	310.00	330.00	.....	32	22

Reducing

Orders for reducing fittings not carried in stock can be filled by using reducing companion flanges. Orders should specify—reduce with flanges if necessary.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
1¼	$7.75	$8.95	$4.80	4⅝	3¾
1½	7.75	8.95	4.80	5	4
2	7.75	8.95	4.80	6	4½
2½	8.00	9.20	5.00	7	5
3	8.75	10.15	5.50	7½	5½
3½	10.35	12.05	6.50	8½	6
4	11.50	13.50	7.25	9	6½
5	15.75	17.75	9.75	10	7½
6	19.25	21.75	12.00	11	8
8	30.50	33.75	18.00	13½	9
10	48.00	53.50	29.00	16	11
12	71.00	77.00	42.00	19	12
14	105.00	112.50	60.00	21	14
16	138.00	148.00	80.00	23½	15
*18	180.00	192.00	.....	25	16½
*20	228.00	242.00	.....	27½	18
*24	355.00	375.00	.....	32	22

Larger sizes made to order; prices on application.

*If the outlet is the size given in the table below or is smaller, use the short body dimensions shown below:

Size	inches	18	20	24
Size of Outlet and Smaller	inches	12	14	16
Center to Face Run	inches	13	14	15
Center to Face Branch	inches	15½	17	19

125-Pound Cast Iron Flanged Fittings

Y Branches or Laterals

Straight

No. 519

All 125-pound fittings have plain faces. Bolt holes will be drilled 1/8 inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Sizes 16 inches and smaller not spot faced; when ordered, there is an extra of 10 cents per hole. Sizes 18 inches and larger, regularly spot faced.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face and Face to Face, Inches
2	$6.75	$7.95	$4.80	6	Furnished on request.
2½	6.95	8.15	5.00	7	
3	7.65	9.05	5.50	7½	
3½	9.00	10.70	6.50	8½	
4	10.00	12.00	7.25	9	
5	13.75	15.75	9.75	10	
6	16.75	19.25	12.00	11	
8	26.50	29.75	18.00	13½	
10	42.00	47.50	29.00	16	
12	61.50	67.50	42.00	19	
14	91.00	98.50	60.00	21	
16	120.00	130.00	80.00	23½	
18	157.00	169.00	.....	25	
20	198.00	212.00	.....	27½	
24	310.00	330.00	.....	32	

Reducing

Reducing in Run or Branch

All Y branches or laterals reducing on run only have same dimensions, face to face, as straight size laterals. All reducing Y branches or laterals, 16 inches and smaller, have same dimensions as same sizes in straight size fittings. Sizes 18 inches and up, reducing on branch, are made in long or short body pattern, depending on size of branch.

No. 520

All 125-pound fittings have plain faces. Bolt holes are drilled 1/8 inch larger in diameter than diameter of bolts.

Sizes of all fittings scheduled indicate diameter of ports.

Laterals are not made with outlet larger than the run.

Sizes 16 inches and smaller not spot faced; when ordered, there is an extra of 10 cents per hole. Sizes 18 inches and larger, regularly spot faced.

Furnished faced and drilled, unless ordered faced only.

Orders for reducing fittings not carried in stock can be filled by using reducing companion flanges. Orders should specify—reduce with flanges if necessary.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diam. Flanges Inches	Center to Face and Face to Face, Inches
2½	$8.00	$9.20	$5.00	7	Furnished on request.
3	8.75	10.15	5.50	7½	
3½	10.35	12.05	6.50	8½	
4	11.50	13.50	7.25	9	
5	15.75	17.75	9.75	10	
6	19.25	21.75	12.00	11	
8	30.50	33.75	18.00	13½	
10	48.00	53.50	29.00	16	
12	71.00	77.00	42.00	19	
14	105.00	112.50	60.00	21	
16	138.00	148.00	80.00	23½	
18	180.00	192.00	.....	25	
20	228.00	242.00	.....	27½	
24	355.00	375.00	.....	32	

Larger sizes made to order; prices on application.

125-Pound Cast Iron Flanged Fittings

Standard Taper Reducers

No. 521

All 125-pound fittings have plain faces. Bolt holes drilled 1/8 inch larger in diameter than bolt diameter. Sizes of all fittings scheduled indicate i.d. of ports. Face to face dimensions standard or eccentric will be the same.

Sizes 16 in. and smaller not spot faced; when ordered, there is an extra of 10 cents per hole. Sizes 18 in. and larger, spot faced.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Face to Face Inches
2 x 1¼	$6.00	$6.60	$2.40	6 x 4⅝	5
2½x 1¼	6.30	6.90	2.50	7 x 4⅝	5½
2½x 1½	6.30	6.90	2.50	7 x 5	5½
3 x 1¼	6.90	7.60	2.75	7½x 4⅝	6
3 x 1½	6.90	7.60	2.75	7½x 5	6
3 x 2	6.90	7.60	2.75	7½x 6	6
3½x 1½	8.10	8.95	3.25	8½x 5	6½
3½x 2	8.10	8.95	3.25	8½x 6	6½
3½x 2½	8.10	8.95	3.25	8½x 7	6½
3½x 3	8.10	8.95	3.25	8½x 7½	6½
4 x 1½	9.00	10.00	3.65	9 x 5	7
4 x 2	9.00	10.00	3.65	9 x 6	7
4 x 2½	9.00	10.00	3.65	9 x 7	7
4 x 3	9.00	10.00	3.65	9 x 7½	7
4 x 3½	9.00	10.00	3.65	9 x 8½	7
5 x 1½	12.50	13.50	4.85	10 x 5	8
5 x 2	12.50	13.50	4.85	10 x 6	8
5 x 2½	12.50	13.50	4.85	10 x 7	8
5 x 3	12.50	13.50	4.85	10 x 7½	8
5 x 3½	12.50	13.50	4.85	10 x 8½	8
5 x 4	12.50	13.50	4.85	10 x 9	8
6 x 2	15.25	16.55	6.00	11 x 6	9
6 x 2½	15.25	16.55	6.00	11 x 7	9
6 x 3	15.25	16.55	6.00	11 x 7½	9
6 x 3½	15.25	16.55	6.00	11 x 8½	9
6 x 4	15.25	16.55	6.00	11 x 9	9
6 x 5	15.25	16.55	6.00	11 x10	9
8 x 2½	24.00	25.60	9.00	13½x 7	11
8 x 3	24.00	25.60	9.00	13½x 7½	11
8 x 3½	24.00	25.60	9.00	13½x 8½	11
8 x 4	24.00	25.60	9.00	13½x 9	11
8 x 5	24.00	25.60	9.00	13½x10	11
8 x 6	24.00	25.60	9.00	13½x11	11
10 x 4	38.00	40.70	14.50	16 x 9	12
10 x 5	38.00	40.70	14.50	16 x10	12
10 x 6	38.00	40.70	14.50	16 x11	12
10 x 8	38.00	40.70	14.50	16 x13½	12
12 x 4	56.00	59.00	21.00	19 x 9	14
12 x 5	56.00	59.00	21.00	19 x10	14
12 x 6	56.00	59.00	21.00	19 x11	14
12 x 8	56.00	59.00	21.00	19 x13½	14
12 x10	56.00	59.00	21.00	19 x16	14
14 x 6	70.00	73.75	30.00	21 x11	16
14 x 8	70.00	73.75	30.00	21 x13½	16
14 x10	70.00	73.75	30.00	21 x16	16
14 x12	70.00	73.75	30.00	21 x19	16
16 x 6	90.00	95.00	40.00	23½x11	18
16 x 8	90.00	95.00	40.00	23½x13½	18
16 x10	90.00	95.00	40.00	23½x16	18
16 x12	90.00	95.00	40.00	23½x19	18
16 x14	90.00	95.00	40.00	23½x21	18
18 x 6	105.00	111.00	.....	25 x11	19
18 x 8	105.00	111.00	.....	25 x13½	19
18 x10	105.00	111.00	.....	26 x16	19
18 x12	105.00	111.00	.....	25 x19	19
18 x14	105.00	111.00	.....	25 x21	19
18 x16	105.00	111.00	.....	25 x23½	19
20 x 8	120.00	127.00	.....	27½x13½	20
20 x10	120.00	127.00	.....	27½x16	20
20 x12	120.00	127.00	.....	27½x19	20
20 x14	120.00	127.00	.....	27½x21	20
20 x16	120.00	127.00	.....	27½x23½	20
20 x18	120.00	127.00	.....	27½x25	20
24 x12	190.00	200.00	.....	32 x19	24
24 x14	190.00	200.00	.....	32 x21	24
24 x16	190.00	200.00	.....	32 x23½	24
24 x18	190.00	200.00	.....	32 x25	24
24 x20	190.00	200.00	.....	32 x27½	24

Taper reducers of any other dimensions special on order.

Eccentric Taper Reducers

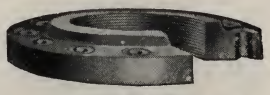
Furnished on special order; prices on application.

125-Pound Cast Iron Flanges

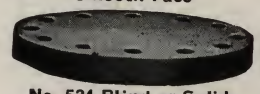
Working Pressures

1 to 36-inch—125 Pounds Steam
1 to 12-inch—175 Pounds Cold Water, Oil or Gas, Non-Shock
14 to 36-inch—150 Pounds Cold Water, Oil or Gas, Non-Shock

No. 522 Companion Smooth Face



Companion Flange Rear View Showing Hub



No. 524 Blind or Solid

Faced and drilled unless ordered faced only. Spot facing bolt holes, $.10 per hole.

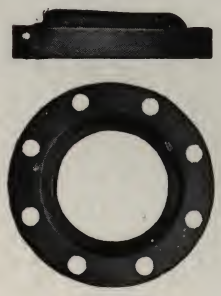
Companion Flanges

Size inches	Faced Only Each	Faced and Drilled Each	Bolt Circle Inches
1 x 4¼	$.55	$.80	3
1¼x 4⅝	.60	.85	3⅜
1½x 5	.65	.90	3⅞
2 x 6	.75	1.00	4¾
2½x 7	.85	1.10	5½
3 x 7½	.95	1.25	6
3½x 8½	1.20	1.55	7
4 x 9	1.35	1.80	7½
5 x10	1.60	2.05	8½
6 x11	2.00	2.50	9½
8 x13½	3.10	3.80	11¾
10 x16	4.50	5.50	14¼
12 x19	6.50	7.65	17
14 x21	9.00	10.35	18¾
16 x23½	13.50	15.30	21¼
18 x25	16.00	18.00	22¾
20 x27½	19.00	21.50	25
24 x32	27.00	30.50	29½

Blind or Solid Flanges

Size In.	Faced Only Each	Faced and Drilled Each	Bolt Circle In.
1 x 4¼	$.85	$1.10	3½
1¼x 4⅝	.90	1.15	3½
1½x 5	1.00	1.25	3⅞
2 x 6	1.15	1.40	4¾
2½x 7	1.30	1.55	5½
3 x 7½	1.40	1.70	6
3½x 8½	1.80	2.15	7
4 x 9	2.00	2.45	7½
5 x10	2.40	2.85	8½
6 x11	3.00	3.50	9½
8 x13½	4.60	5.30	11¾
10 x16	6.75	7.75	14¼
12 x19	9.75	10.90	17
14 x21	13.50	14.85	18¾
16 x23½	20.00	21.80	21¼
18 x25	24.00	26.00	22¾
20 x27½	28.00	30.50	25
24 x32	40.00	43.50	29½
30 x38¾	90.00	100.00	36
36 x46	137.50	150.00	42¾

Templates for Drilling 125-Pound Flanged Cast Iron Valves and Fittings



No. 530

These drilling templates are in multiples of four so that fittings may be made to face in any quarter, and bolt holes straddle the center line. Can be drilled to any other template.

For bolts smaller than 1¾-inch diameter, bolt holes are drilled 1/8 inch larger than diameter of bolt. For bolts 1¾-inch diameter and larger, bolt holes are drilled ¼ inch larger than diameter of bolt.

Size In.	Diam. Flanges In.	Thickness Flanges In.	Bolt Circle In.	No. Bolts	Size Bolts In.	Bolt Lengths In.
1	4¼	7/16	3⅛	4	½	1¾
1¼	4⅝	½	3½	4	½	2
1½	5	9/16	3⅞	4	½	2
2	6	⅝	4¾	4	⅝	2¼
2½	7	11/16	5½	4	⅝	2½
3	7½	¾	6	4	⅝	2½
3½	8½	13/16	7	8	⅝	2¾
4	9	15/16	7½	8	⅝	3
5	10	15/16	8½	8	¾	3
6	11	1	9½	8	¾	3¼
8	13½	1⅛	11¾	8	¾	3½
10	16	1 3/16	14¼	12	⅞	3¾
12	19	1¼	17	12	⅞	3¾
14	21	1⅜	18¾	12	1	4¼
16	23½	1 7/16	21¼	16	1	4½
18	25	1 9/16	22¾	16	1⅛	4¾
20	27½	1 11/16	25	20	1⅛	5
24	32	1⅞	29½	20	1¼	5½
30	38¾	2⅛	36	28	1¼	6¼
36	46	2⅜	42¾	32	1½	7
42	53	2⅝	49½	36	1½	7½
48	59½	2¾	56	44	1½	7¾
54	66¼	3	62¾	44	1¾	*10½
60	73	3⅛	69¼	52	1¾	*10¾
72	86½	3½	82½	60	1¾	*11½
84	99¾	3⅞	95½	64	2	*12¾
96	113¼	4¼	108½	68	2¼	*14

*Bolt-studs with 2 nuts.

125-Pound Cast Iron Reducing Flanges

Working Pressures:
125 Pounds Steam
5 to 19-In. O.D.—175 Lb. Cold Water, Oil or Gas, Non-Shock
21 to 32-In. O.D.—150 Lb. Cold Water, Oil or Gas, Non-Shock

No. 529

These flanges, used in connection with straight or reducing fittings, make it possible to fill orders for reduced sizes more promptly. Customers who desire fittings reduced in this manner will please specify: Reduce by flanges if necessary.

They will always be of the same thickness as the regular companion flanges of corresponding outside diameter, and drilled to the template corresponding to the outside diameter, unless otherwise ordered.

Companion flanges are furnished **faced and drilled unless** ordered faced only. Spot facing bolt holes, $.10 per hole.

When ordering reducing flanges, the screwed or reduced size should be designated first, and then the outside diameter of the flange. For example, a 125-pound flange to connect a 6-inch pipe to a 10-inch valve or fitting (O.D. of flange, 16 inches) should be ordered 6x16-inch reducing flange.

Standard Dimensions

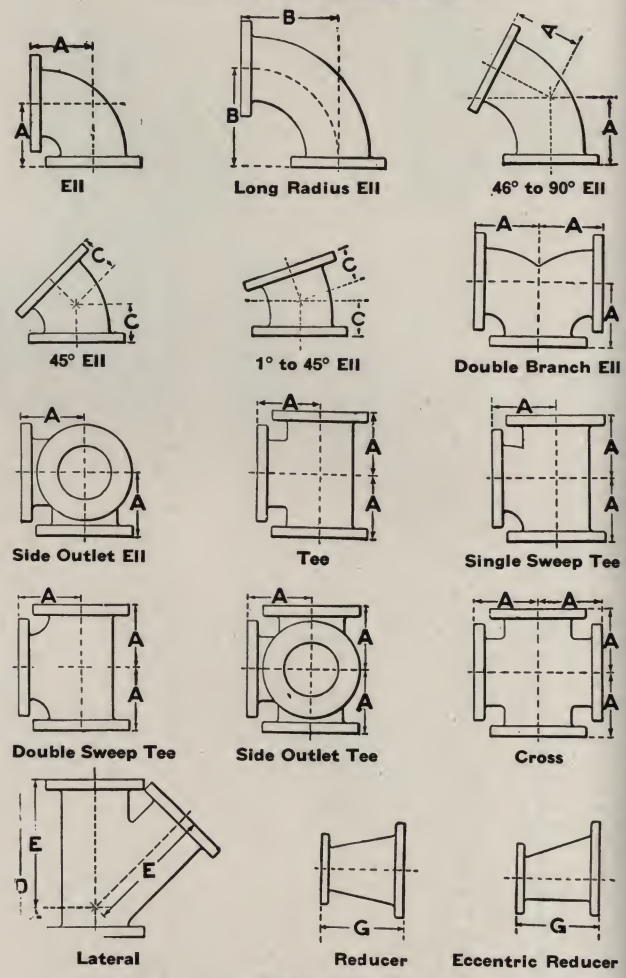
Size Pipe Inches	O.D. Flange Inches	Size Pipe Inches	O.D. Flange Inches	Size Pipe Inches	O.D. Flange Inches
1	4¼	3½	8½	12	19
1¼	4⅝	4	9	14 O.D.	21
1½	5	5	10	16 O.D.	23½
2	6	6	11	18 O.D.	25
2½	7	8	13½	20 O.D.	27½
3	7½	10	16	24 O.D.	32

Prices

Size Inches	Faced Only Each	Faced and Drilled Each	Size Inches	Faced Only Each	Faced and Drilled Each
1 x 5	$1.15	$1.40	3½x11	$3.30	$3.80
1 x 6	1.30	1.55	3½x13½	5.10	5.80
1 x 7½	1.55	1.85	3½x16	7.45	8.45
1 x 9	2.20	2.65	3½x19	10.75	11.90
1¼x 5	1.15	1.40	4 x10	2.65	3.10
1¼x 6	1.30	1.55	4 x11	3.30	3.80
1¼x 7½	1.55	1.85	4 x13½	5.10	5.80
1¼x 9	2.20	2.65	4 x16	7.45	8.45
1½x 6	1.30	1.55	4 x19	10.75	11.90
1½x 7	1.45	1.70	4 x21	15.00	16.35
1½x 7½	1.55	1.85	5 x11	3.30	3.80
1½x 8½	2.00	2.35	5 x13½	5.10	5.80
1½x 9	2.20	2.65	5 x16	7.45	8.45
1½x10	2.65	3.10	5 x19	10.75	11.90
1½x11	3.30	3.80	5 x21	15.00	16.35
1½x13½	5.10	5.80	6 x13½	5.10	5.80
1½x16	7.45	8.45	6 x16	7.45	8.45
1½x19	10.75	11.90	6 x19	10.75	11.90
2 x 7	1.45	1.70	6 x21	15.00	16.35
2 x 7½	1.55	1.85	6 x23½	22.00	23.80
2 x 8½	2.00	2.35	6 x25	26.50	28.50
2 x 9	2.20	2.65	8 x16	7.45	8.45
2 x10	2.65	3.10	8 x19	10.75	11.90
2 x11	3.30	3.80	8 x21	15.00	16.35
2 x13½	5.10	5.80	8 x23½	22.00	23.80
2 x16	7.45	8.45	8 x25	26.50	28.50
2 x19	10.75	11.90	10 x19	10.75	11.90
2½x 7½	1.55	1.85	10 x21	15.00	16.35
2½x 8½	2.00	2.35	10 x23½	22.00	23.80
2½x 9	2.20	2.65	10 x25	26.50	28.50
2½x10	2.65	3.10	12 x21	15.00	16.35
2½x11	3.30	3.80	12 x23½	22.00	23.80
2½x13½	5.10	5.80	12 x25	26.50	28.50
2½x16	7.45	8.45	14 x23½	22.00	23.80
2½x19	10.75	11.90	14 x25	26.50	28.50
3 x 8½	2.00	2.35	14 x27½	31.00	33.50
3 x 9	2.20	2.65	14 x32	44.00	47.50
3 x10	2.65	3.10	16 x25	26.50	28.50
3 x11	3.30	3.80	16 x27½	31.00	33.50
3 x13½	5.10	5.80	16 x32	44.00	47.50
3 x16	7.45	8.45	18 x27½	31.00	33.50
3 x19	10.75	11.90	18 x32	44.00	47.50
3½x 9	2.20	2.65	20 x32	44.00	47.50
3½x10	2.65	3.10	.....	.....	.....

General Dimensions of 125-Pound Cast Iron Flanged Fittings

American Standard, Straight Sizes



Size In.	AA Face to Face Tees and Crosses	Center to Face *A Elbows Tees and Crosses	B Long Radius Elbows	*C 45° Elbows	45° Laterals D Face to Face	E Center to Face	F Center to Face	G Face to Face Reducers	Flanges Diam.	Flanges Thickness
1	7	3½	5	1¾	7½	5¾	1¾	....	4¼	7/16
1¼	7½	3¾	5½	2	8	6¼	1¾	....	4⅝	½
1½	8	4	6	2¼	9	7	2	....	5	9/16
2	9	4½	6½	2½	10½	8	2½	5	6	⅝
2½	10	5	7	3	12	9½	2½	5½	7	11/16
3	11	5½	7¾	3	13	10	3	6	7½	¾
3½	12	6	8½	3½	14½	11½	3	6½	8½	13/16
4	13	6½	9	4	15	12	3	7	9	15/16
5	15	7½	10¼	4½	17	13½	3½	8	10	15/16
6	16	8	11½	5	18	14½	3½	9	11	1
8	18	9	14	5½	22	17½	4½	11	13½	1⅛
10	22	11	16½	6½	25½	20½	5	12	16	1 3/16
12	24	12	19	7½	30	24½	5½	14	19	1¼
14	28	14	21½	7½	33	27	6	16	21	1⅜
16	30	15	24	8	36½	30	6½	18	23½	1 7/16
18	33	16½	26½	8½	39	32	7	19	25	1 9/16
20	36	18	29	9½	43	35	8	20	27½	1 11/16
24	44	22	34	11	49½	40½	9	24	32	1⅞
30	50	25	41½	15	59	49	10	30	38¾	2⅛
36	56	28	49	18	....	....	....	36	46	2⅜
42	62	31	56½	21	....	....	....	...	53	2⅝
48	68	34	64	24	....	....	....	...	59½	2¾

*Special angle fittings 1° to 45° use center to face dimension of 45° elbow, and 46° to 90° use center to face dimension of 90° elbow.

Furnished plain faced unless otherwise ordered.

250-Pound Cast Iron Flanged Fittings

1 to 24-Inch—250 Pounds Steam Working Pressure
1 to 12-Inch—400 Pounds Cold Water, Oil, or Gas Non-Shock Working Pressure
14 to 24-Inch—350 Pounds Cold Water, Oil, or Gas Non-Shock Working Pressure

American Standard. Dimensions and drilling of these fittings conform to the 250-Pound American Cast Iron Flanged Fitting Standard (B16b-1928).

Although the American Standard rates fittings 1 to 30-inch for 250 pounds steam working pressure, 250-pound fittings larger than 24-inch are made to order of a design suitable for the pressure intended, retaining American Standard center to face dimensions, flange dimensions, and drilling.

Facing. Flanges have a 1/16-inch raised face. The raised face is finished with concentric grooves, approximately 16 grooves per inch, known as a serrated finish.

Fittings with male, female, tongue, or groove faces can be made to order at an additional price.

Drilling. Fittings are furnished faced and drilled unless ordered faced only. The bolt holes on drilled fittings straddle the center lines unless otherwise ordered, in which case a sketch should accompany the order.

For bolts smaller than 1¾-inch diameter, the bolt holes are drilled ⅛ inch larger than the diameter of the bolts; for bolts 1¾-inch diameter and larger, ¼ inch larger than the diameter of the bolts.

Side Outlet Elbows. All openings are on the intersecting center lines. Reducing side outlet elbows are regularly made reduced only on the side outlet. Other reductions are made to order only; orders should be accompanied by a sketch showing the size and location of all openings, prices on application.

Double Branch Elbows. In describing double branch elbows the branches are named first and then the outlet. Reducing double branch elbows are regularly made reduced only on the branches with both branches the same size. Other reductions are made to order only; orders should be accompanied by a sketch showing the size and location of all openings, prices on application.

Base Elbows. The base on base elbows is not faced or drilled unless so ordered. Round bases, when drilled, will be drilled to the template of the flange corresponding to the size of the supporting pipe.

Special Angle Elbows. Elbows from 1 to 45° have the same center to face dimensions as 45° elbows; 46 to 90° have the same center to face dimensions as 90° elbows. These fittings are made to order only.

Single Sweep Tees. Single sweep tees with the outlet larger than the run are made to order only. Prices and dimensions upon application.

Double Sweep Tees. Double sweep tees reduced on the run are made to order only. Prices and dimensions upon application. Double sweep tees with the outlet larger than the run can be made with only a reasonable increase in the size of the outlet.

Side Outlet Tees. Orders for reducing side outlet tees should be accompanied by a sketch showing the size and location of all openings.

Base Tees. Base tees are made to order only, prices upon application. Dimensions of the base are the same as for base elbows.

45° Laterals. Reducing 45° laterals with the outlet larger than the run are entirely special. Prices and dimensions upon application.

Dimensions of Reducing Fittings. The center to face dimensions of reducing elbows, tees, crosses, and 45° laterals are the same as for the straight size corresponding to the size of the largest opening, with the following exception: In sizes 18-inch and larger, reducing tees, crosses, and 45° laterals are made in 2 lengths depending upon the size of the outlet, known as Long Body and Short Body.

Face to face dimension of reducers is governed by the size of the larger opening, regardless of the size of the smaller opening.

250-Pound Cast Iron Flanged Fittings

90° Elbows

No. 531

All 250-pound fittings have a raised surface for gaskets 1/16-inch high, inside of bolt holes.

Bolt holes will be drilled ⅛-inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
1	$4.50	$5.40	$3.00	4⅞	4
1¼	4.50	5.40	3.00	5¼	4¼
1½	4.50	5.40	3.00	6⅛	4½
2	4.50	5.40	3.00	6½	5
2½	4.75	5.65	3.10	7½	5½
3	5.15	6.25	3.50	8¼	6
3½	6.10	7.35	4.10	9	6½
4	6.75	8.25	4.50	10	7
5	9.35	10.85	6.00	11	8
6	11.40	13.40	7.50	12½	8½
8	18.00	20.50	11.25	15	10
10	28.50	32.50	18.00	17½	11½
12	42.00	46.50	26.00	20½	13
14	62.00	67.50	37.50	23	15
16	82.00	90.00	50.00	25½	16½
18	106.00	115.00	.....	28	18
20	135.00	145.00	.....	30½	19½
24	210.00	225.00	.....	36	22½

45° Elbows

No. 532

All 250-pound fittings have a raised surface for gaskets 1/16-inch high inside of bolt holes.

Bolt holes will be drilled ⅛ inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
1	$5.00	$5.90	$3.00	4⅛	2
1¼	5.00	5.90	3.00	5¼	2½
1½	5.00	5.90	3.00	6⅛	2¾
2	5.00	5.90	3.00	6½	3
2½	5.25	6.15	3.10	7½	3½
3	5.65	6.75	3.50	8¼	3½
3½	6.75	8.00	4.10	9	4
4	7.50	9.00	4.50	10	4½
5	10.35	11.85	6.00	11	5
6	12.50	14.50	7.50	12½	5½
8	19.00	21.50	11.25	15	6
10	30.00	34.00	18.00	17½	7
12	44.00	48.50	26.00	20½	8
14	62.00	67.50	37.50	23	8½
16	82.00	90.00	50.00	25½	9½
18	106.00	115.00	.....	28	10
20	135.00	145.00	.....	30½	10½
24	210.00	225.00	.....	36	12

Larger sizes made to order; prices on application.

250-Pound Cast Iron Flanged Fittings

Reducing Taper Elbows

No. 533

Reducing elbows carry same dimensions center to face as regular elbows of largest straight size.

All 250-pound fittings have a raised surface, for gaskets 1/16 inch high, inside of bolt holes.

Bolt holes will be drilled 1/8 inch larger than the diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
1½x 1¼	$9.00	$9.90	$3.00	6⅛x 5¼	4½
2 x 1¼	9.00	9.90	3.00	6½x 5¼	5
2 x 1½	9.00	9.90	3.00	6½x 6⅛	5
2½x 1½	9.50	10.40	3.10	7½x 6⅛	5½
2½x 2	9.50	10.40	3.10	7½x 6½	5½
3 x 1¼	10.25	11.35	3.50	8¼x 5¼	6
3 x 1½	10.25	11.35	3.50	8¼x 6⅛	6
3 x 2	10.25	11.35	3.50	8¼x 6½	6
3 x 2½	10.25	11.35	3.50	8¼x 7½	6
3½x 1½	12.25	13.50	4.10	9 x 6⅛	6½
3½x 2	12.25	13.50	4.10	9 x 6½	6½
3½x 2½	12.25	13.50	4.10	9 x 7½	6½
3½x 3	12.25	13.50	4.10	9 x 8¼	6½
4 x 1½	13.50	15.00	4.50	10 x 6⅛	7
4 x 2	13.50	15.00	4.50	10 x 6½	7
4 x 2½	13.50	15.00	4.50	10 x 7½	7
4 x 3	13.50	15.00	4.50	10 x 8¼	7
4 x 3½	13.50	15.00	4.50	10 x 9	7
5 x 2½	18.75	20.25	6.00	11 x 7½	8
5 x 3	18.75	20.25	6.00	11 x 8¼	8
5 x 3½	18.75	20.25	6.00	11 x 9	8
5 x 4	18.75	20.25	6.00	11 x10	8
6 x 2	22.75	24.75	7.50	12½x 6½	8½
6 x 2½	22.75	24.75	7.50	12½x 7½	8½
6 x 3	22.75	24.75	7.50	12½x 8¼	8½
6 x 3½	22.75	24.75	7.50	12½x 9	8½
6 x 4	22.75	24.75	7.50	12½x10	8½
6 x 5	22.75	24.75	7.50	12½x11	8½
8 x 3	36.00	38.50	11.25	15 x 8¼	10
8 x 4	36.00	38.50	11.25	15 x10	10
8 x 5	36.00	38.50	11.25	15 x11	10
8 x 6	36.00	38.50	11.25	15 x12½	10
10 x 4	57.00	61.00	18.00	17½x10	11½
10 x 5	57.00	61.00	18.00	17½x11	11½
10 x 6	57.00	61.00	18.00	17½x12½	11½
10 x 8	57.00	61.00	18.00	17½x15	11½
12 x 5	84.00	88.50	26.00	20½x11	13
12 x 6	84.00	88.50	26.00	20½x12½	13
12 x 8	84.00	88.50	26.00	20½x15	13
12 x10	84.00	88.50	26.00	20½x17½	13
14 x 6	105.00	110.50	37.50	23 x12½	15
14 x10	105.00	110.50	37.50	23 x17½	15
14 x12	105.00	110.50	37.50	23 x20½	15
16 x 8	135.00	143.00	50.00	25½x15	16½
16 x10	135.00	143.00	50.00	25½x17½	16½
16 x12	135.00	143.00	50.00	25½x20½	16½
16 x14	135.00	143.00	50.00	25½x23	16½

Larger sizes made to order; prices on application.

250-Pound Cast Iron Flanged Fittings

Long Radius Elbows

All 250-pound fittings have a raised surface, for gaskets 1/16 inch high, inside of bolt holes. Bolt holes will be drilled 1/8 inch larger than the diameter of the bolts.

No. 534

Size of all fittings scheduled indicates i.d. of ports.

Sizes 16 inches and smaller not spot faced; when ordered, there is an extra of 10 cents per hole. Sizes 18 inches and larger, regularly spot faced.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
1	$7.50	$8.85	$4.50	....	....
1¼	7.50	8.85	4.50	....	....
1½	7.50	8.85	4.50	....	....
2	7.50	8.85	4.50	6½	6½
2½	8.00	9.35	4.65	7½	7
3	8.60	10.25	5.25	8¼	7¾
3½	10.25	12.15	6.15	9	8½
4	11.25	13.50	6.75	10	9
5	15.50	17.75	9.00	11	10¼
6	19.00	22.00	11.25	12½	11½
8	30.00	33.75	16.75	15	14
10	47.75	53.75	27.00	17½	16½
12	70.00	76.75	39.00	20½	19
14	103.50	111.75	56.00	23	21½
16	137.00	149.00	75.00	25½	24
18	177.00	191.00	.....	28	26½
20	225.00	240.00	.....	30½	29

Round and Square Base Elbows

No. 535

The measurement across the flat edges of square base flange is the same as the diameter of the round base flange.

All 250-pound fittings have a raised surface, for gaskets 1/16 inch high, inside of bolt holes.

Bolt holes will be drilled 1/8 inch larger than the diameter of the bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Sizes 16 inches and smaller not spot faced; when ordered, there is an extra of 10 cents per hole. Sizes 18 inches and larger, regularly spot faced.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	For Facing and Drilling Base Flange Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches	Diameter Base Flange Inches
4	$13.50	$15.00	$4.50	$6.75	10	7	6½
5	18.75	20.25	5.25	9.00	11	8	7½
6	22.75	24.75	5.25	11.25	12½	8½	7½
8	36.00	38.50	7.50	16.75	15	10	10
10	57.00	61.00	7.50	27.00	17½	11½	10
12	84.00	88.50	11.00	39.00	20½	13	12½
14	105.00	110.50	11.00	56.00	23	15	12½
16	135.00	143.00	11.00	75.00	25½	16½	12½

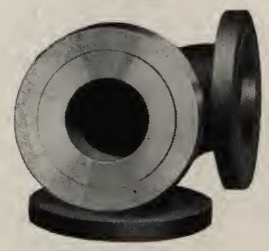
Base Tees

Furnished on special order; prices on application.

250-Pound Cast Iron Flanged Fittings

Side Outlet Elbows

Straight



No. 536

All 250-pound fittings have a raised surface, for gaskets 1/16 inch thick inside of bolt holes. Bolt holes drilled 1/8 inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
4	$35.75	$38.00	$6.75	10	7
5	37.75	40.00	9.00	11	8
6	42.00	45.00	11.25	12½	8½
8	61.25	65.00	16.75	15	10
10	89.00	95.00	27.00	17½	11½
12	113.25	120.00	39.00	20½	13
14	146.75	155.00	56.00	23	15
16	168.00	180.00	75.00	25½	16½

Reducing

Reducing on the Branches Same Size

No. 537

The dimensions of reduced flanged fittings are always regulated by the reductions of the outlet or branch.

Side outlet elbows, whether straight or reducing sizes, carry same dimensions center to face and face to face as regular tees having same reductions.

Side outlet elbows, whether straight or reducing, are furnished with all openings on intersecting center lines.

Bolt holes will not be spot faced unless so ordered, for which an extra charge will be made.

All 250-pound fittings have a raised surface, for gaskets 1/16 inch thick inside of bolt holes. Bolt holes drilled 1/8 inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Spot facing bolt holes, 10 cent per hole.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
4	$39.75	$42.00	$6.75	10	7
5	41.75	44.00	9.00	11	8
6	47.00	50.00	11.25	12½	8½
8	67.25	71.00	16.75	16	10
10	99.00	105.00	27.00	17½	11½
12	123.25	130.00	39.00	20½	13
14	161.75	170.00	56.00	23	15
16	183.00	195.00	75.00	25½	16½

Larger sizes made to order; prices on application.

250-Pound Cast Iron Flanged Fittings

Double Branch Elbows

Straight

No. 538

All 250-pound fittings have a raised surface, for gaskets 1/16 inch thick inside of bolt holes. Bolt holes drilled 1/8 inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
4	$35.75	$38.00	$6.75	10	7
5	42.75	45.00	9.00	11	8
6	49.50	52.50	11.25	12½	8½
7	56.50	60.00	.....	14	9
8	66.25	70.00	16.75	15	10
10	84.00	90.00	27.00	17½	11½
12	108.25	115.00	39.00	20½	13
14	141.75	150.00	56.00	23	15
16	168.00	180.00	75.00	25½	16½

Reducing

Reducing on the Branches Same Size

No. 539

The dimensions of reduced flanged fittings are always regulated by the reductions of the outlet or branch.

Double branch elbows, whether straight or reducing sizes, carry same dimensions center to face and face to face as regular straight size elbows and tees.

Prices given for reducing elbows are for fittings reducing on the branches same size. If fittings are wanted with two branches of two different sizes, or reducing on the inlet, they will be furnished on special order at a special price.

All 250-pound fittings have a raised surface, for gaskets 1/16 inch thick inside of bolt holes. Bolt holes drilled 1/8 inch larger in diameter than diameter of bolts.

Sizes of all fittings scheduled indicate inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

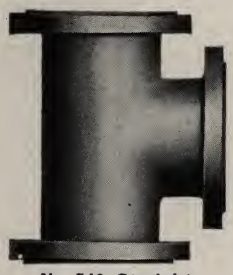
Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
4	$39.75	$42.00	$6.75	10	7
5	47.75	50.00	9.00	11	8
6	54.50	57.50	11.25	12½	8½
7	62.50	66.00	.....	14	9
8	73.75	77.50	16.75	15	10
10	94.00	100.00	27.00	17½	11½
12	118.25	125.00	39.00	20½	13
14	156.75	165.00	56.00	23	15
16	188.00	200.00	75.00	25½	16½

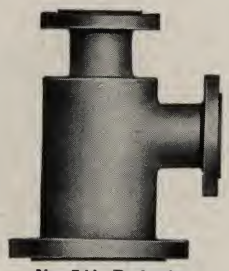
Larger sizes made to order; prices on application.

250-Pound Cast Iron Flanged Fittings

Tees



No. 540, Straight



No. 541, Reducing

All reducing tees, 16 inches and smaller take the same center to face dimensions as straight size tees of largest port. All tees reducing on the run only take the same dimensions center to face as the largest straight size. Tees, sizes 18 inches and larger, and reducing on the outlet, are made in two lengths, depending on the size of outlet.

Bullheads, or tees having outlet larger than the run, will be the same length center to face of all openings as a tee with all openings of the size of the outlet.

All 250-pound fittings have a raised surface, for gaskets 1/16 inch high, inside of bolt holes.

Bolt holes will be drilled 1/8 inch larger than the diameter of the bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Straight

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
1	$6.50	$7.85	$4.50	4 7/8	4
1 1/4	6.50	7.85	4.50	5 1/4	4 1/4
1 1/2	6.50	7.85	4.50	6 1/8	4 1/2
2	6.50	7.85	4.50	6 1/2	5
2 1/2	6.90	8.25	4.65	7 1/2	5 1/2
3	7.50	9.15	5.25	8 1/4	6
3 1/2	8.90	10.80	6.15	9	6 1/2
4	9.75	12.00	6.75	10	7
5	13.50	15.75	9.00	11	8
6	16.50	19.50	11.25	12 1/2	8 1/2
8	26.00	29.75	16.75	15	10
10	41.50	47.50	27.00	17 1/2	11 1/2
12	61.00	67.75	39.00	20 1/2	13
14	90.00	98.25	56.00	23	15
16	119.00	131.00	75.00	25 1/2	16 1/2
18	154.00	168.00	.....	28	18
20	195.00	210.00	.....	30 1/2	19 1/2
24	305.00	328.00	.....	36	22 1/2

Reducing

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
1 1/4	$7.50	$8.85	$4.50	5 1/4	4 1/4
1 1/2	7.50	8.85	4.50	6 1/8	4 1/2
2	7.50	8.85	4.50	6 1/2	5
2 1/2	8.00	9.35	4.65	7 1/2	5 1/2
3	8.60	10.25	5.25	8 1/4	6
3 1/2	10.25	12.15	6.15	9	6 1/2
4	11.25	13.50	6.75	10	7
5	15.50	17.75	9.00	11	8
6	19.00	22.00	11.25	12 1/2	8 1/2
8	30.00	33.75	16.75	15	10
10	47.75	53.75	27.00	17 1/2	11 1/2
12	70.00	76.75	39.00	20 1/2	13
14	103.50	111.75	56.00	23	15
16	137.00	149.00	75.00	25 1/2	16 1/2
18	177.00	191.00	.....	28	18
20	225.00	240.00	.....	30 1/2	19 1/2
24	350.00	373.00	.....	36	22 1/2

Larger sizes made to order; prices on application.

250-Pound Cast Iron Flanged Fittings

Single Sweep Tees

Straight

No. 542

All 250-pound fittings heva a raised surface, for gaskets 1/16 inch high, inside of bolt holes. Bolt holes will be drilled 1/8 inch larger than the diameter of the bolts.

Size of all fittings scheduled indicate inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
2	$7.50	$8.85	$4.50	6 1/2	5
2 1/2	8.00	9.35	4.65	7 1/2	5 1/2
3	8.60	10.25	5.25	8 1/4	6
3 1/2	10.25	12.15	6.15	9	6 1/2
4	11.25	13.50	6.75	10	7
5	15.50	17.75	9.00	11	8
6	19.00	22.00	11.25	12 1/2	8 1/2
8	30.00	33.75	16.75	15	10
10	47.75	53.75	27.00	17 1/2	11 1/2
12	70.00	76.75	39.00	20 1/2	13
14	103.50	111.75	56.00	23	15
16	137.00	149.00	75.00	25 1/2	16 1/2
18	177.00	191.00	.....	28	18
20	225.00	240.00	.....	30 1/2	19 1/2
24	350.00	373.00	.....	36	22 1/2

Reducing

Reducing in Run or Branch

All reducing tees, 16 inches and smaller, take same center to face dimensions as straight size tees of largest port. All tees reducing on run only take same dimensions center to face as largest straight size. Tees, sizes 18 inches and larger, and reducing on the outlet, are made in two lengths, depending on size of reduced outlet. Reducing single sweep tees made to order only. Single sweep tees with side openings larger than run, not made.

No. 543

All 250-pound fittings have a raised surface, for gaskets 1/16 inch high, inside of bolt holes.

Bolt holes will be drilled 1/8 inch larger than the diameter of the bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

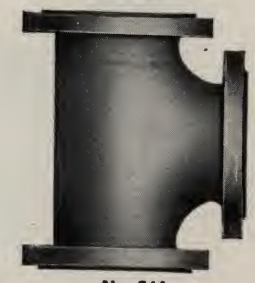
Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
2 1/2	$9.15	$10.50	$4.65	7 1/2	5 1/2
3	9.90	11.55	5.25	8 1/4	6
3 1/2	11.75	13.65	6.15	9	6 1/2
4	13.00	15.25	6.75	10	7
5	17.85	20.10	9.00	11	8
6	22.00	25.00	11.25	12 1/2	8 1/2
8	34.50	38.25	16.75	15	10
10	55.00	61.00	27.00	17 1/2	11 1/2
12	80.00	86.75	39.00	20 1/2	13
14	119.00	127.25	56.00	23	15
16	158.00	170.00	75.00	25 1/2	16 1/2
18	204.00	218.00	.....	28	....
20	260.00	275.00	.....	30 1/2	....
24	402.00	425.00	.....	36	....

Larger sizes made to order; prices on application.

250-Pound Cast Iron Flanged Fittings

Double Sweep Tees

Straight



No. 544

All 250-pound fittings have a raised surface, for gaskets 1/16 inch high, inside of bolt holes.

Bolt holes will be drilled 1/8 inch larger than the diameter of the bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
2	$7.50	$8.85	$4.50	6½	5
2½	8.00	9.35	4.65	7½	5½
3	8.60	10.25	5.25	8¼	6
3½	10.25	12.15	6.15	9	6½
4	11.25	13.50	6.75	10	7
5	15.50	17.75	9.00	11	8
6	19.00	22.00	11.25	12½	8½
8	30.00	33.75	16.75	15	10
10	47.75	53.75	27.00	17½	11½
12	70.00	76.75	39.00	20½	13
14	103.50	111.75	56.00	23	15
16	137.00	149.00	75.00	25½	16½
18	177.00	191.00	.....	28	18
20	225.00	240.00	.....	30½	19½
24	350.00	373.00	.....	36	22½

Reducing

Reducing in Branch Only

All reducing tees 16 inches and smaller reducing on outlet, take same center to face dimensions as straight size tees of largest port. Tees, sizes 18 inches and larger reducing on outlet, are made in two lengths, depending on size of outlet. Double sweep tees not made reducing on run.

No. 545

All 250-pound fittings have a raised surface, for gaskets 1/16 inch high, inside of bolt holes.

Bolt holes will be drilled 1/8 inch larger than the diameter of the bolts. Sizes of all fittings scheduled indicate the inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
2½	$9.15	$10.50	$4.65	7½	5½
3	9.90	11.55	5.25	8¼	6
3½	11.75	13.65	6.15	9	6½
4	13.00	15.25	6.75	10	7
5	17.85	20.10	9.00	11	8
6	22.00	25.00	11.25	12½	8½
8	34.50	38.25	16.75	15	10
10	55.00	61.00	27.00	17½	11½
12	80.00	86.75	39.00	20½	13
14	119.00	127.25	56.00	23	15
16	158.00	170.00	75.00	25½	16½
18	204.00	218.00	.....	28	....
20	260.00	275.00	.....	30½	....
24	402.00	425.00	.....	36	....

Larger sizes made to order; prices on application.

250-Pound Cast Iron Flanged Fittings

Crosses

Straight

All 250-pound fittings have a raised surface, for gaskets 1/16 inch high, inside of bolt holes. The raised face is finished with concentric grooves, approximately 16 grooves per inch, known as a serrated finish.

No. 548

Bolt holes drilled 1/8 inch larger than the diameter of the bolts.

Size of all fittings scheduled indicates i.d. of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
1	$10.00	$11.80	$6.00	4⅞	4
1¼	10.00	11.80	6.00	5¼	4¼
1½	10.00	11.80	6.00	6⅛	4½
2	10.00	11.80	6.00	6½	5
2½	10.50	12.30	6.25	7½	5½
3	11.50	13.75	7.00	8¼	6
3½	13.50	16.00	8.25	9	6½
4	15.00	18.00	9.00	10	7
5	20.50	23.50	12.00	11	8
6	25.00	29.00	15.00	12½	8½
8	40.00	45.00	22.50	15	10
10	63.00	71.00	36.00	17½	11½
12	92.00	101.00	52.00	20½	13
14	136.00	147.00	75.00	23	15
16	180.00	196.00	100.00	25½	16½
18	235.00	253.00	.....	28	18
20	300.00	320.00	.....	30½	19½
24	465.00	495.00	.....	36	22½

Reducing

All 250-pound fittings have a raised surface, for gaskets 1/16 inch high, inside of bolt holes. The raised face is finished with concentric grooves, approximately 16 grooves per inch, known as a serrated finish.

No. 549

Bolt holes drilled 1/8 inch larger in diameter than diameter of bolts. Sizes of all fittings scheduled indicate i.d. of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Orders for reducing fittings not carried in stock can be filled by using reducing companion flanges. Orders should specify—reduce with flanges if necessary.

1¼	$11.50	$13.30	$6.00	5¼	4¼
1½	11.50	13.30	6.00	6⅛	4½
2	11.50	13.30	6.00	6½	5
2½	12.00	13.80	6.25	7½	5½
3	13.25	15.50	7.00	8¼	6
3½	15.50	18.00	8.25	9	6½
4	17.00	20.00	9.00	10	7
5	23.50	26.50	12.00	11	8
6	29.00	33.00	15.00	12½	8½
8	46.00	51.00	22.50	15	10
10	72.00	80.00	36.00	17½	11½
12	106.00	115.00	52.00	20½	13
14	158.00	169.00	75.00	23	15
16	207.00	223.00	100.00	25½	16½
*18	270.00	288.00	.....	28	18
*20	345.00	365.00	.....	30½	19½
*24	535.00	565.00	.....	36	22½

*If the outlet is the size given in the table below, or is smaller, use the short body dimensions.

Size	inches	18	20	24
Size Outlet and Smaller	inches	12	14	16
Center to Face of Run	inches	14	15½	17
Center to Face of Branch	inches	17	18½	21½

Larger sizes made to order; prices on application.

250-Pound Cast Iron Flanged Fittings

Side Outlet or 4-Way Tees

Straight

No. 546

All 250-pound fittings have a raised surface, for gaskets 1/16 inch thick inside of bolt holes. Bolt holes drilled 1/8 inch larger in diameter than diameter of bolts.

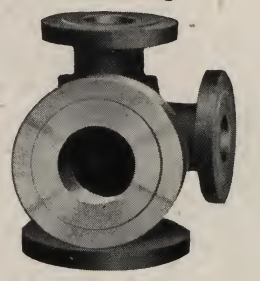
Size of all fittings scheduled indicates inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
4	$42.00	$45.00	$9.00	10	7
5	47.00	50.00	12.00	11	8
6	53.50	57.50	15.00	12½	8½
8	72.50	77.50	22.50	15	10
10	102.00	110.00	36.00	17½	11½
12	131.00	140.00	52.00	20½	13
14	159.00	170.00	75.00	23	15
16	184.00	200.00	100.00	25½	16½

Reducing



No. 547

The dimensions of reduced flanged fittings are always regulated by the reductions of the outlet or branch. Fittings reducing on the run only, the long body pattern will always be used.

Side outlet tees, whether straight or reducing, carry same dimensions center to face and face to face as regular tees having same reductions.

Bolt holes will not be spot faced unless so ordered, for which an extra charge will be made.

All 250 pound fittings have a raised surface, for gaskets 1/16 inch thick inside of bolt holes. Bolt holes drilled 1/8 inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
4	$47.00	$50.00	$9.00	10	7
5	52.00	55.00	12.00	11	8
6	59.00	63.00	15.00	12½	8½
8	80.00	85.00	22.50	15	10
10	112.00	120.00	36.00	17½	11½
12	146.00	155.00	52.00	20½	13
14	174.00	185.00	75.00	23	15
16	204.00	220.00	100.00	25½	16½

Larger sizes made to order; prices on application.

250-Pound Cast Iron Flanged Fittings

Y Branches or Laterals

Straight

No. 550

All 250-pound fittings have a raised surface, for gaskets 1/16 inch high, inside of bolt holes.

Bolt holes will be drilled 1/8 inch larger than the diameter of the bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
2	$10.00	$11.80	$6.00	6½	9
2½	10.50	12.30	6.25	7½	10½
3	11.50	13.75	7.00	8¼	11
3½	13.50	16.00	8.25	9	12½
4	15.00	18.00	9.00	10	13½
5	20.50	23.50	12.00	11	15
6	25.00	29.00	15.00	12½	17½
8	40.00	45.00	22.50	15	20½
10	63.00	71.00	36.00	17½	24
12	92.00	101.00	52.00	20½	27½
14	136.00	147.00	75.00	23	31
16	180.00	196.00	100.00	25½	34½
18	235.00	253.00	.....	28	37½
20	300.00	320.00	.....	30½	40½
24	465.00	495.00	.....	36	47½

Reducing

Reducing in Run or Branch

All Y branches or laterals reducing on run only carry same dimensions, face to face, as straight size laterals.

No. 551

All reducing Y or laterals, 16 inches and smaller, take same center to face dimensions as same sizes in straight size fittings. Sizes 18 inches and up, reducing on branch, are made in two lengths, depending on size of branch.

All 250-pound fittings have a raised surface, for gaskets 1/16 inch high, inside of bolt holes. Bolt holes are drilled 1/8 inch larger in diameter than diameter of bolts. Sizes of all fittings scheduled indicates i.d. of ports.

Laterals are not made with the outlet larger than the run.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Orders for reducing fittings not carried in stock can be filled by using reducing companion flanges. Order should specify—reduce with flanges if necessary.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
2½	$12.00	$13.80	$6.25	7½	10½
3	13.25	15.50	7.00	8¼	11
3½	15.50	18.00	8.25	9	12½
4	17.00	20.00	9.00	10	13½
5	23.50	26.50	12.00	11	15
6	29.00	33.00	15.00	12½	17½
8	46.00	51.00	22.50	15	20½
10	72.00	80.00	36.00	17½	24
12	106.00	115.00	52.00	20½	27½
14	158.00	169.00	75.00	23	31
16	207.00	223.00	100.00	25½	34½
18	270.00	288.00	.....	28	37½
20	345.00	365.00	.....	30½	40½
24	535.00	565.00	.....	36	47½

Larger sizes made to order; prices on application.

250-Pound Cast Iron Flanged Fittings

Standard Taper Reducers

No. 552

All 250-pound fittings have a raised surface, for gaskets 1/16-inch high, inside of bolt holes.

Bolt holes will be drilled 1/8-inch larger in diameter than diameter of the bolts.

Size of all fittings scheduled indicates inside diameter of ports. The face to face dimensions standard or eccentric will be the same.

Spot facing bolt holes, 10 cents per hole.

Furnished faced and drilled, unless ordered faced only.

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each	Diameter Flanges Inches	Center to Face Inches
2 x 1½	$9.00	$9.90	$3.00	6½x 6⅛	5
2½x 2	9.50	10.40	3.10	7½x 6½	5½
3 x 2	10.25	11.35	3.50	8¼x 6½	6
3 x 2½	10.25	11.35	3.50	8¼x 7½	6
3½x 2	12.25	13.50	4.10	9 x 6½	6
3½x 2½	12.25	13.50	4.10	9 x 7½	6½
3½x 3	12.25	13.50	4.10	9 x 8¼	6½
4 x 2	13.50	15.00	4.50	10 x 6½	7
4 x 2½	13.50	15.00	4.50	10 x 7½	7
4 x 3	13.50	15.00	4.50	10 x 8¼	7
4 x 3½	13.50	15.00	4.50	10 x 9	7
5 x 2	18.75	20.25	6.00	11 x 6½	8
5 x 2½	18.75	20.25	6.00	11 x 7½	8
5 x 3	18.75	20.25	6.00	11 x 8¼	8
5 x 3½	18.75	20.25	6.00	11 x 9	8
5 x 4	18.75	20.25	6.00	11 x10	8
6 x 2	22.75	24.75	7.50	12½x 7½	9
6 x 2½	22.75	24.75	7.50	12½x 8¼	9
6 x 3	22.75	24.75	7.50	12½x 8¼	9
6 x 3½	22.75	24.75	7.50	12½x 9	9
6 x 4	22.75	24.75	7.50	12½x10	9
6 x 5	22.75	24.75	7.50	12½x11	9
8 x 3	36.00	38.50	11.25	15 x 8¼	11
8 x 3½	36.00	38.50	11.25	15 x 9	11
8 x 4	36.00	38.50	11.25	15 x10	11
8 x 5	36.00	38.50	11.25	15 x11½	11
8 x 6	36.00	38.50	11.25	15 x12	11
10 x 4	57.00	61.00	18.00	17½x10	12
10 x 5	57.00	61.00	18.00	17½x11	12
10 x 6	57.00	61.00	18.00	17½x12½	12
10 x 8	57.00	61.00	18.00	17½x15	12
12 x 4	84.00	88.50	26.00	20½x10	14
12 x 5	84.00	88.50	26.00	20½x11	14
12 x 6	84.00	88.50	26.00	20½x12½	14
12 x 8	84.00	88.50	26.00	20½x15	14
12 x10	84.00	88.50	26.00	20½x17½	14
14 x 6	105.00	110.50	37.50	23 x12½	16
14 x 8	105.00	110.50	37.50	23 x15	16
14 x10	105.00	110.50	37.50	23 x17½	16
14 x12	105.00	110.50	37.50	23 x20½	16
16 x 8	135.00	143.00	50.00	25½x15	18
16 x10	135.00	143.00	50.00	25½x17½	18
16 x12	135.00	143.00	50.00	25½x20½	18
16 x14	135.00	143.00	50.00	25½x23	18
18 x10	157.00	166.00	.....	28 x17½	19
18 .12	157.00	166.00	.....	28 x20½	19
18 x14	157.00	166.00	.....	28 x23	19
18 x16	157.00	166.00	.....	28 x25½	19
20 x12	180.00	190.00	.....	30½x20½	20
20 x14	180.00	190.00	.....	30½x23	20
20 x16	180.00	190.00	.....	30½x25½	20
20 x18	180.00	190.00	.....	30½x28	20
24 x16	285.00	300.00	.....	36 x25½	24
24 x18	285.00	300.00	.....	36 x28	24
24 x20	285.00	300.00	.....	36 x30½	24

Taper reducers of any other dimensions special on order.

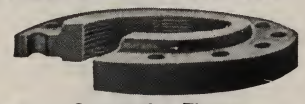
Eccentric Taper Reducers

Furnished on special order; prices on application.

250-Pound Cast Iron Flanges

1 to 24-Inch: 250 Lb. Steam Water Press.
1 to 12-Inch: 400 Lb. Water, Oil, Gas, Non-Shock Water Press.
14 to 24-Inch: 350 Lb. Water, Oil, Gas, Non-Shock Water Press.

No. 580 Companion Rough Face



Companion Flange Rear View Showing Hub

No. 582 Blind or Solid

Faced and drilled, unless ordered faced only. Spot facing bolt holes, $.10 per hole.

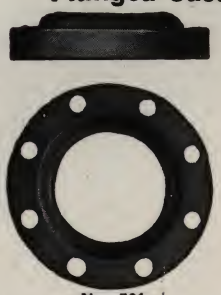
Nos. 580 and 581 Companion Flanges

Size Inches	Faced Only Each	Faced and Drilled Each	Bolt Circle Inches
1 x 4⅞	$.95	$1.30	3¼
1¼x 5¼	1.00	1.35	3¾
1½x 6⅛	1.10	1.45	4½
2 x 6½	1.25	1.60	5
2½x 7½	1.40	1.75	5⅞
3 x 8¼	1.60	2.05	6⅝
3½x 9	2.00	2.55	7¼
4 x10	2.25	2.95	7⅞
5 x11	2.65	3.35	9¼
6 x12½	3.30	4.05	10⅝
8 x15	5.10	6.15	13
10 x17½	7.40	8.90	15¼
12 x20½	10.75	12.50	17¾
14 x23	15.00	17.00	20¼
16 x25½	22.25	25.00	22½
18 x28	26.00	29.00	24¾
20 x30½	31.00	35.00	27
24 x36	45.00	50.00	32

No. 582 Blind or Solid Flanges

Size Inches	Faced Only Each	Faced and Drilled Each	Bolt Circle Inches
1 x 4⅞	$1.45	$1.80	3½
1¼x 5¼	1.50	1.85	3⅞
1½x 6⅛	1.65	2.00	4½
2 x 6½	1.90	2.25	5
2½x 7½	2.10	2.45	5⅞
3 x 8¼	2.40	2.85	6⅝
3½x 9	3.00	3.55	7¼
4 x10	3.35	4.05	7⅞
5 x11	4.00	4.70	9¼
6 x12½	5.00	5.75	10⅝
8 x15	7.65	8.70	13
10 x17½	11.00	12.50	15¼
12 x20½	16.00	17.75	17¾
14 x23	22.50	24.50	20¼
16 x25½	33.50	36.25	22½
18 x28	39.00	42.00	24¾
20 x30½	46.00	50.00	27
24 x36	67.00	72.00	32

Templates for Drilling 250-Pound Flanged Cast Iron Valves and Fittings



No. 561

These drilling templates are in multiples of four so that fittings may be made to face in any quarter, and bolt holes straddle the center line. Can be drilled to any other template.

For bolts smaller than 1¾-inch diameter, bolt holes are drilled ⅛ inch larger than the diameter of bolt. For bolts 1¾-inch diameter and larger, bolt holes are drilled ¼ inch larger than diameter of bolt.

Size Inches	Diam. Flanges Inches	Thickness Flanges Inches	Bolt Circle Inches	No Bolts	Size Bolts Inches	Bolt Lengths Inches
1	4⅞	11/16	3½	4	⅝	2½
1¼	5¼	¾	3⅞	4	⅝	2½
1½	6⅛	13/16	4½	4	¾	2¾
2	6½	⅞	5	8	⅝	2¾
2½	7½	1	5⅞	8	¾	3¼
3	8¼	1⅛	6⅝	8	¾	3½
3½	9	1 3/16	7¼	8	¾	3½
4	10	1¼	7⅞	8	¾	3¾
5	11	1⅜	9¼	8	¾	4
6	12½	1 7/16	10⅝	12	¾	4
8	15	1⅝	13	12	⅞	4½
10	17½	1⅞	15¼	16	1	5¼
12	20½	2	17¾	16	1⅛	5½
14	23	2⅛	20¼	20	1⅛	6
16	25½	2¼	22½	20	1¼	6¼
18	28	2⅜	24¾	24	1¼	6½
20	30½	2½	27	24	1¼	6¾
24	36	2¾	32	24	1½	7¾
30	43	3	39¼	28	1¾	*10½
36	50	3⅜	46	32	2	*11¾
42	57	3 11/16	52¾	36	2	*12½
48	65	4	60¾	40	2	*13

*Bolt-studs with 2 nuts.

250-Pound Cast Iron Reducing Flanges

Working Pressures:
250 Pounds Steam
6⅛ to 20½-In. O.D.—400 Lb. Cold Water, Oil, Gas, Non-Shock
23 to 36-In. O.D.—350 Lb. Cold Water, Oil, Gas, Non-Shock

No. 583

These flanges used in connection with straight or reducing fittings, make it possible to fill orders more promptly. Customers who desire fittings reduced in this manner will please specify: Reduce by flanges if necessary.

These flanges will always be of the same thickness as the regular companion flanges of corresponding outside diameters, and drilled to the template corresponding to the outside diameter, unless otherwise ordered.

Companion flanges are furnished faced and drilled unless ordered faced only.

Spot facing bolt holes $.10 per hole.

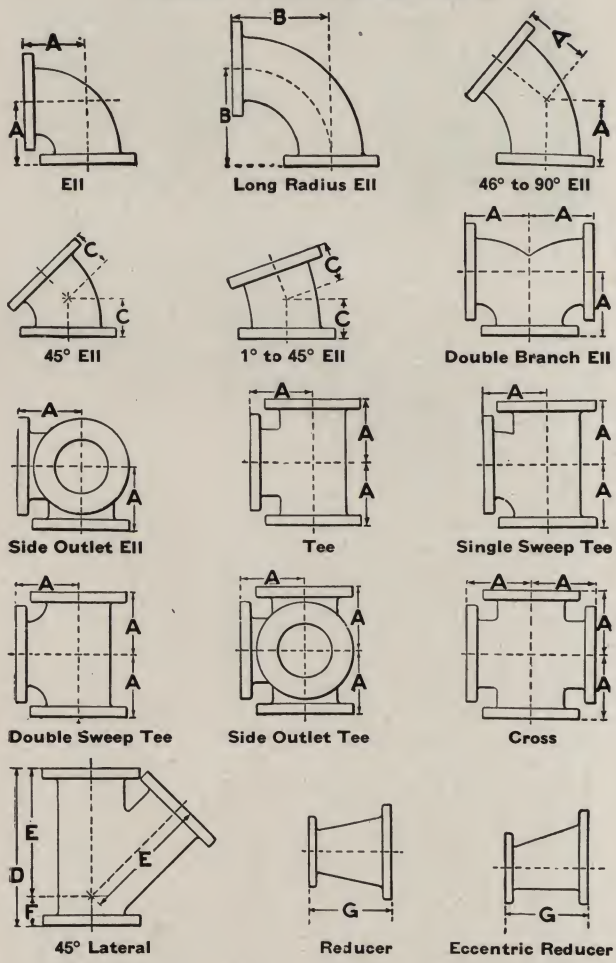
In ordering reducing companion flanges always give the screwed or reduced size first, then the outside diameter of flange wanted; for instance, if a reducing flange is wanted to connect a 6-inch pipe to a 10-inch flanged valve or fitting having a 17½-inch o.d. flange, order a 6x17½-inch reducing flange. This will clearly avoid the confusion often caused by orders incorrectly calling for a 10x6 or a 6x10-inch flange.

Size Inches	Faced Only Each	Faced and Drilled Each	Size Inches	Faced Only Each	Faced and Drilled Each
1¼x 6⅛	$1.80	$2.15	3½x11	$4.40	$5.10
			3½x15	8.40	9.45
1½x 6½	2.10	2.45	3½x20½	17.50	19.25
1½x 7½	2.30	2.65			
1½x 8¼	2.65	3.10	4 x11	4.40	5.10
1½x 9	3.30	3.85	4 x12½	5.50	6.25
1½x10	3.70	4.40	4 x15	8.40	9.45
1½x11	4.40	5.10	4 x17½	12.00	13.50
1½x12½	5.50	6.25	4 x20½	17.50	19.25
1½x15	8.40	9.45			
			5 x12½	5.50	6.25
2 x 7½	2.30	2.65	5 x15	8.40	9.45
2 x 8¼	2.65	3.10	5 x17½	12.00	13.50
2 x 9	3.30	3.85	5 x20½	17.50	19.25
2 x10	3.70	4.40	6 x15	8.40	9.45
2 x11	4.40	5.10	6 x17½	12.00	13.50
2 x12½	5.50	6.25	6 x20½	17.50	19.25
2 x15	8.40	9.45	6 x23	25.00	27.00
2 x17½	12.00	13.50			
			8 x17½	12.00	13.50
2½x 8¼	2.65	3.10	8 x20½	17.50	19.25
2½x 9	3.30	3.85	8 x23	25.00	27.00
2½x10	3.70	4.40	10 x20½	17.50	19.25
2½x11	4.40	5.10	10 x23	25.00	27.00
2½x12½	5.50	6.25	10 x25½	37.00	39.75
2½x15	8.40	9.45	12 x23	25.00	27.00
2½x17½	12.00	13.50	12 x25½	37.00	39.75
2½x20½	17.50	19.25	12 x28	43.00	46.00
3 x 9	3.30	3.85	14 x25½	37.00	39.75
3 x10	3.70	4.40	14 x28	43.00	46.00
3 x11	4.40	5.10	14 x30½	51.00	55.00
3 x12½	5.50	6.25	16 x28	43.00	46.00
3 x15	8.40	9.45	16 x30½	51.00	55.00
3 x17½	12.00	13.50	18 x30½	51.00	55.00
3 x20½	17.50	19.25	18 x36	74.00	79.00
3½x10	3.70	4.40	20 x36	74.00	79.00

General Dimensions of 250-Pound Flanged Fittings

Cast Iron

American Standard, Straight Sizes

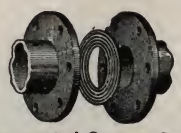


All 250-pound flanges have a 1/16-inch raised face inside of bolt holes. This raised face is included in face to face, center to face, and thickness of flange dimensions.

	Dimensions, Inches									
	AA, Face to Face	Center to Face			45° Laterals					
Size In.	Tees and Crosses	*A, Elbows Tees and Crosses	B Long Radius Elbows	*C 45° Elbows	D Face to Face	E Center to Face	F Center to Face	G Face to Face Reducers	Flanges Diam.	Flanges Thickness
1	8	4	5	2	8½	6½	2	...	4⅞	11/16
1¼	8½	4¼	5½	2½	9½	7¼	2¼	...	5¼	¾
1½	9	4½	6	2¾	11	8½	2½	...	6⅛	13/16
2	10	5	6½	3	11½	9	2½	5	6½	⅞
2½	11	5½	7	3½	13	10½	2½	5½	7½	1
3	12	6	7¾	3½	14	11	3	6	8¼	1⅛
3½	13	6½	8½	4	15½	12½	3	6½	9	1 3/16
4	14	7	9	4½	16½	13½	3	7	10	1¼
5	16	8	10¼	5	18½	15	3½	8	11	1⅜
6	17	8½	11½	5½	21½	17½	4	9	12½	1 7/16
8	20	10	14	6	25½	20½	5	11	15	1⅝
10	23	11½	16½	7	29½	24	5½	12	17½	1⅞
12	26	13	19	8	33½	27½	6	14	20½	2
14	30	15	21½	8½	37½	31	6½	16	23	2⅛
16	33	16½	24	9½	42	34½	7½	18	25½	2¼
18	36	18	26½	10	45½	37½	8	19	28	2⅜
20	39	19½	29	10½	49	40½	8½	20	30½	2½
24	45	22½	34	12	57½	47½	10	24	36	2¾
30	55	27½	41½	15	....	....	....	30	43	3

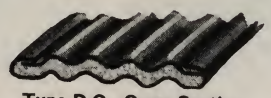
*Special angle fittings 1° to 45° use center to face dimension of 45° elbow and 46° to 90° use center to face dimension of 90° elbow.

Akron Metal Gaskets

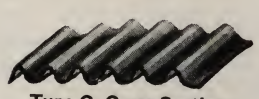


Corrugated Copper Gasket

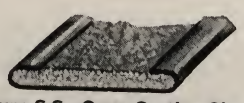
Type A.R., Cross Section Asbestos Ribbed Gasket



Type D.C., Cross Section Corrugated Asbestos Filled Gasket



Type C, Cross Section Corrugated Metal Gasket



Type S.S., Cross Section Single Shell Asbestos Filled Gasket; Has Asbestos Exposed on One Side

There are 24 different types of Akron gaskets. Can be furnished made of monel metal, aluminum, stainless steel, Armco iron, bronze, Akro-Metal, steel, or any metal or metal asbestos.

Unless other metals are specified, gaskets are furnished of copper and copper asbestos.

When ordering, state inside and outside diameter of gaskets and metal required.

Gaskets for Standard Flanged Fittings To Fit Inside the Bolts

Size Pipe Inches	Each	Inside Diam. Inches	Outside Diam. Inches
1/2	$.14	1/2	1 1/4
3/4	.15	3/4	2
1	.16	1	2 1/2
1 1/4	.17	1 1/4	2 7/8
1 1/2	.18	1 1/2	3 1/4
2	.19	2	4 1/8
2 1/2	.29	2 1/2	4 7/8
3	.29	3	5 3/8
3 1/2	.42	3 1/2	6 3/8
4	.47	4	6 7/8
4 1/2	.45	4 1/2	7
5	.55	5	7 3/4
6	.63	6	8 3/4
7	.80	7	10
8	.89	8	11
9	1.18	9	12 1/2
10	1.19	10	13 3/8
12	1.76	12	16 1/8
14	1.87	14	17 3/4
15	2.14	15	19
16	2.42	16	20 1/4
18	2.58	18	21 5/8
20	2.77	20	23 7/8
22	3.02	22	26
24	3.49	24	28 1/4

Gaskets for Extra Heavy Flanged Fittings To Fit Inside the Bolts

Size Pipe Inches	Each	Inside Diam. Inches	Outside Diam. Inches
1/2	$.15	1/2	2 3/8
3/4	.16	3/4	2 5/8
1	.17	1	2 3/4
1 1/4	.18	1 1/4	3 1/8
1 1/2	.20	1 1/2	3 3/4
2	.22	2	4 1/4
2 1/2	.29	2 1/2	5
3	.43	3	5 3/4
3 1/2	.47	3 1/2	6 3/8
4	.52	4	7
4 1/2	.62	4 1/2	7 5/8
5	.74	5	8 3/8
6	.92	6	9 3/4
7	1.13	7	10 7/8
8	1.25	8	12
9	1.38	9	13
10	1.62	10	14 1/8
12	2.15	12	16 1/2
14	2.90	13 1/4	19
15	3.10	14 1/4	20 1/8
16	3.25	15 1/4	21 1/8
18	4.05	17	23 3/8
20	4.50	19	25 1/2
22	4.95	21	27 5/8
24	5.05	23	30 1/4

The following gaskets can also be furnished:

Copper asbestos cylinder head gaskets for oil, gas and gasoline engines; soft steel shell asbestos filled gaskets for boiler tube caps; Akro-Metal corrugated gaskets and asbestos filled gaskets for high pressures; plain flat metal gaskets and washers of any metal, any size, thickness, or shape; gaskets cut from rubber, compressed asbestos packing, paper, fibre, etc.

Gaskets

For Standard and Extra Heavy Flanged Valves and Fittings

Ring Gasket

Full Face Gasket

Ring gaskets cover the face of the flange to the inside edge of the bolts, and will always be furnished unless otherwise ordered.

Full face gaskets are furnished without bolt holes unless otherwise ordered. An extra charge is made for punching bolt holes.

For 125 Pounds Steam Working Pressure

Pipe Size In.	Ring Gaskets: 1/16-In. Cloth Insertion Each	Ring Gaskets: 1/16-In. Red Rubber Each	Ring Gaskets: 1/16-In. Sheet Asbestos Each	Ring Gaskets: I.D. and O.D. Inches	Full Face Gaskets: 1/16-In. Cloth Insertion Each	Full Face Gaskets: 1/16-In. Red Rubber Each	Full Face Gaskets: 1/16-Inch Sheet Asbestos Each	Full Face Gaskets: I.D. and O.D. Inches
1	$.05	$.09	$.12	1 x 2 5/8	$.10	$.17	$.29	1 x 4 1/4
1 1/4	.07	.13	.15	1 1/4 x 3	.14	.25	.31	1 1/4 x 4 5/8
1 1/2	.07	.13	.19	1 1/2 x 3 3/8	.14	.25	.35	1 1/2 x 5
2	.07	.17	.22	2 x 4 1/8	.18	.34	.50	2 x 6
2 1/2	.09	.21	.27	2 1/2 x 4 7/8	.23	.42	.70	2 1/2 x 7
3	.12	.25	.32	3 x 5 3/8	.28	.50	.78	3 x 7 1/2
3 1/2	.14	.35	.46	3 1/2 x 6 3/8	.30	.67	.98	3 1/2 x 8 1/2
4	.16	.39	.50	4 x 6 7/8	.35	.75	1.05	4 x 9
5	.19	.50	.58	5 x 7 3/4	.42	1.00	1.15	5 x10
6	.23	.59	.65	6 x 8 3/4	.47	1.20	1.30	6 x11
8	.30	.75	.90	8 x11	.65	1.45	1.90	8 x13 1/2
10	.42	1.00	1.20	10 x13 3/8	.88	2.00	2.70	10 x16
12	.58	1.25	1.80	12 x16 1/8	1.15	2.50	3.70	12 x19
14	.70	1.56	1.85	14 x17 3/4	1.30	2.80	4.15	14 x21
16	.82	2.00	2.25	16 x20 1/4	1.65	3.55	4.95	16 x23 1/2
18	.86	2.30	1.95	18 x21 5/8	1.85	4.00	5.00	18 x25
20	1.02	2.50	2.35	20 x23 7/8	2.00	4.40	5.60	20 x27 1/2
24	1.40	2.90	4.00	24 x28 1/4	2.55	5.25	6.80	24 x32

For 250 Pounds Steam Working Pressure

Pipe Size In.	Ring Gaskets: 1/16-In. Red Rubber Each	Ring Gaskets: 27-Gage Corrugated Copper Each	Ring Gaskets: 1/16-In. Sheet Asbestos Each	Ring Gaskets: I.D. and O.D. Inches	Full Face Gaskets: 1/16-In. Red Rubber Each	Full Face Gaskets: 1/16-In. Sheet Asbestos Each	Full Face Gaskets: I.D. and O.D. Inches
1	$.17	$.16	$.15	1 x 2 7/8	$.38	$.35	1 x 4 7/8
1 1/4	.17	.17	.18	1 1/4 x 3 1/4	.38	.41	1 1/4 x 5 1/4
1 1/2	.17	.18	.22	1 1/2 x 3 3/4	.38	.55	1 1/2 x 6 1/8
2	.19	.20	.24	2 x 4 3/8	.45	.60	2 x 6 1/2
2 1/2	.25	.29	.31	2 1/2 x 5 1/8	.55	.84	2 1/2 x 7 1/2
3	.32	.40	.42	3 x 5 7/8	.67	.97	3 x 8 1/4
3 1/2	.35	.42	.48	3 1/2 x 6 1/2	.75	1.10	3 1/2 x 9
4	.38	.45	.57	4 x 7 1/8	.95	1.40	4 x10
5	.52	.60	.75	5 x 8 1/2	1.05	1.60	5 x11
6	.63	.84	.98	6 x 9 7/8	1.25	1.90	6 x12 1/2
8	.90	1.04	1.30	8 x12 1/8	1.70	2.55	8 x15
10	1.15	1.45	1.65	10 x14 1/4	....	....	.....
12	1.50	1.88	2.00	12 x16 5/8	....	....	.....
14	2.10	1.94	3.30	13 1/4 x19 1/8	....	....	.....
16	2.50	2.88	3.70	15 1/4 x21 1/4	....	....	.....
18	2.85	2.96	4.15	17 x23 1/2	....	....	.....
20	3.05	3.54	4.85	19 x25 3/4	....	....	.....
24	4.00	4.88	6.30	23 x30 1/2	....	....	.....

Corrugated copper gaskets are recommended only when used with smooth faced flanges, and should be coated with thread lubricant when installed.

Gaskets made from other commercial gasket materials can be made to order; prices upon application.

Standard Malleable Iron Fittings

Banded and Plain

No. 101
90° Elbows

No. 102
45° Elbows

No. 103
90° Street Elbows

No. 105
Side Outlet Elbows

No. 110
Tees

No. 112
Four-Way Tees

Black

Price Each

Sizes.....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Ells, 90° Straight	$.06	$.06	$.06	$.07	$.10	$.13	$.20	$.25	$.40	$.72†	$1.00†	$1.50†	$1.80†	$3.25†	$4.65†
90° Reducing	...	.07	.07	.08	.11	.14	.22	.28	.44	.80†	1.10†	1.65†	2.00†	....	5.15†
90° R.&L.	...	.07†	.07†	.08†	.12†	.15†	.23†	.29†	.46†	...	....	....	....	....	....
90° Street, Straight	.07	.07	.07	.08	.12	.15	.23†	.29†	.46†	.83†	1.15†	1.80†	2.10†	3.75†	5.35†
90° Street, Reducing	...	...	.08†	...	.13†	.17†	.25†	.32†	.51†	.92†	1.30†	....	2.30†	....	....
45°	.07†	.07	.07	.09	.12	.16	.24	.30	.48	.86†	1.20†	1.80†	2.20†	3.90†	5.60†
45° Street	.08†	.08†	.08†	.10†	.14†	.18†	.28†	.35†	.55†	1.00†	1.40†	....	2.55†	....	....
60°	...	...	...	...	...	...	.31‡	.40‡	.62‡	....	....	....	....	....	....
Side Outlet, Straight	...	.12‡	.12‡	.14‡	.20‡	.26‡	.40‡	.50‡	.80‡	....	....	....	....	....	....
Side Outlet, Reducing	...	...	.14‡	.16‡	.22‡	.28‡	.44‡	...	....	....	....	....	....	....	....
Female Drop, Straight	...	.08‡	.08‡	.12‡	.18‡	...	...	...	...	....	....	....	....	....	....
Female Drop, Reducing	...	...	.09‡	...	.20‡	...	...	...	...	....	....	....	....	....	....
M.&F. Short Drop, Straight	...	...	.08‡	.12‡	...	...	...	...	...	....	....	....	....	....	....
M.&F. Short Drop, Reducing	...	...	.09‡	.13‡	...	...	...	...	...	....	....	....	....	....	....
M.&F. Long Drop, Straight	...	...	.10‡	.15‡	...	...	...	...	...	....	....	....	....	....	....
M.& F. Long Drop, Reducing	...	...	.11‡	.17‡	...	...	...	...	...	....	....	....	....	....	....
Tees, Straight	.08	.08	.08	.10	.13	.17	.26	.33	.52	.90†	1.30†	2.00†	2.40†	4.25†	6.00†
Reducing	...	.09	.09	.11	.15	.19	.29	.37	.57	1.00†	1.45†	2.20†	2.65†	4.70†	6.60†
Street, Straight	...	.09†	.09†	.12†	.15†	.20†	.30†	.38†	.60†	1.05†	1.50†	....	2.75†	....	....
Street, Reducing	...	...	...	.13†	.17†	.22†	.33†	.42†	.66†	1.15†	1.65†	....	3.05†	....	....
Four-Way	...	.16‡	.16‡	.20‡	.26‡	.34‡	.52‡	.66‡	1.05‡	....	....	....	....	....	....
Female Drop, Straight	...	...	.10‡	.15‡	.22‡	...	...	...	...	....	....	....	....	....	....
Female Drop, Reducing	...	...	.11‡	.17‡	.24‡	.32‡	...	...	...	....	....	....	....	....	....
M.&F. Short Drop, Straight	...	...	.10‡	...	...	...	...	...	...	....	....	....	....	....	....
M.&F. Short Drop, Reducing	...	...	.11‡	.17‡	.24‡	.32‡	...	...	...	....	....	....	....	....	....
M.&F. Long Drop Straight	...	...	.12‡	...	...	...	...	...	...	....	....	....	....	....	....
M.&F. Long Drop, Reducing	...	...	...	...	.29‡	.40‡	.65‡	...	...	....	....	....	....	....	....
Crosses, Straight	...	.11	.11	.13	.18	.23	.35	.44	.70	1.25†	1.75‡	2.65†	3.15†	5.70†	8.15†
Reducing	...	.12†	.12	.14	.20	.25	.38	.48	.77	1.40†	1.95†	....	3.45†	....	9.00†
Y Bends, 45° Straight	...	...	.10†	.14†	.18†	.25†	.40	.57	.85	1.55†	2.80†	....	4.80†	....	....
45° Reducing	...	...	...	...	...	.28†	.44†	.63	.95	1.70†	3.10†	....	....	9.00†	13.00†
60° Straight	...	...	...	...	...	...	...	...	1.00‡	....	....	....	....	....	....
Reducers	...	.05	.05	.06	.09	.12	.15	.18	.28†	.50†	.75†	1.10†	1.40†	2.50†	3.60†
Couplings, R.H.	.05	.05	.05	.06	.09	.12	.16	.21	.34	.60†	.85†	1.25†	1.50†	2.00†	3.05†
R.&L.	.05†	.05†	.05†	.06†	.09†	.12†	.16†	.21†	.34†	.60†	.85†	....	....	....	....
Caps	.04†§	.04§	.04§	.05	.08	.10	.13†	.18†	.25†	.40†	.60†	.80†	1.10†	1.80†	2.70†
Locknuts, Hexagonal	.2½	.02½	.02½	.03	.04	.06	.08	.10	.12	.30	.38	.43	.48‖	....	.....
Bushings, Hexagon	...	.04	.04	.04	.05	.06	.07	.09	.14	.21	....	....	....	....	....
Face	...	.08*	.08*	.09*	.11*	.13	.17	.22	.32	.48	.70	1.20	1.50	2.60	3.75
Return Bends, Close, R.H.	...	...	...	.16†	.18†	.24†	.36†	.49†	.80†	....	....	....	....	....	....
Close, R.&L.	...	...	...	.18†	.21†	.28†	.42†	.56†	.92†	....	....	....	....	....	....
Medium, R.H.	...	...	...	.17†	.20†	.26†	.40†	.55†	.88†	....	....	....	....	....	....
Medium, R.&L.	...	...	...	.19†	.23†	.30†	.46†	.63†	1.00†	....	....	....	....	....	....
Open, R.H.	...	...	...	.19†	.22†	.29†	.44†	.62†	1.00†	1.45†	2.15†	....	5.80†	....	....
Open, R.&L.	...	...	...	.22†	.26†	.34†	.51†	.70†	1.15†	1.65†	2.45†	....	....	....	....
Special Wide, R.H.	...	...	.25†	...	1.00†¶	1.25†	1.25†	2.00†	3.00†¶	....	5.00†	....	....	....	16.00†
Extension Pieces, Straight	...	...	.05‡	.07‡	.11‡	.16‡	.18‡	.23‡	.33‡	....	....	....	....	....	....
Reducing	...	...	...	.07‡	.11‡	...	...	...	...	....	....	....	....	....	....
Waste Nuts	.04	.04	.04	.04	.05	.06	.11	.25	.41	....	....	....	....	....	....
Chandelier Loops, Male	...	...	.07	.09	...	...	...	...	...	....	....	....	....	....	....
Chandelier Hooks, Male, Female	...	...	.07	.09	...	...	...	...	...	....	....	....	....	....	....
Wall Plates	...	...	.14	.18	.28	...	...	...	...	....	....	....	....	....	....
Offsets	...	...	...	...	.20†	.30†	.50†	...	...	....	....	....	....	....	....

*Made of steel. †Banded only. ‡Plain only. §Plain style made of steel. ‖Octagonal.

¶With 6-inch center to center dimension: ¾-inch size $1.25; 2-inch size $4.00.

Standard Malleable Iron Fittings

Banded and Plain

No. 116 Crosses

No. 119 45° Y Bends

No. 122 Right and Left Hand Couplings

No. 123 Reducers

No. 125 Caps

No. 135 Hexagon Bushing

No. 136 Face Bushings

Galvanized

Price Each

Sizes.....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Ells, 90° Straight	$.08	$.08	$.08	$.09	$.13	$.17	$.26	$.33	$.52	$.95†	$1.30†	$1.95†	$2.35†	$4.25†	$6.05†
90° Reducing	...	.09	.09	.10	.14	.18	.29	.36	.57	1.05†	1.45†	2.15†	2.60†	....	6.70†
90° R.&L.	...	.09†	.09†	.10†	.16†	.20†	.30†	.38†	.60†	....	....	....	....	....	....
90° Street, Straight	.09	.09	.09	.10	.16	.20	.30†	.38†	.60†	1.10†	1.50†	2.35†	2.75†	4.90†	6.95†
90° Street, Reducing	...	...	.10†	...	.17†	.22†	.33†	.42†	.55†	1.20†	1.70†	....	3.00†	....	....
45°	.09†	.09	.09	.12	.16	.21	.31	.39	.62	1.10†	1.55†	2.25†	2.85†	5.10†	7.30†
45° Street	.10†	.10†	.10†	.13†	.18†	.23†	.36†	.46†	.72†	1.30†	1.85†	....	3.30†	....	....
60°	...	...	...	...	...	...	.40‡	.52‡	.80‡	....	....	....	....	....	....
Side Outlet, Straight	...	.16‡	.16‡	.18‡	.26‡	.34‡	.52‡	.65‡	1.05‡	....	....	....	....	....	....
Side Outlet, Reducing	...	...	.18‡	.21‡	.29‡	.36‡	.57‡	...	....	....	....	....	....	....	....
Female Drop, Straight	...	.11‡	.11‡	.16‡	.23‡	...	...	...	....	....	....	....	....	....	....
Female Drop, Reducing	...	...	.12‡	...	.26‡	...	...	...	....	....	....	....	....	....	....
M.&F. Short Drop, Straight	...	...	.11‡	.16‡	...	...	...	...	....	....	....	....	....	....	....
M.&F. Short Drop, Reducing	...	...	.12‡	.17‡	...	...	...	...	....	....	....	....	....	....	....
M.&F. Long Drop, Straight	...	...	.13‡	.20‡	...	...	...	...	....	....	....	....	....	....	....
M.&F. Long Drop, Reducing	...	...	.14‡	.22‡	...	...	...	...	....	....	....	....	....	....	....
Tees, Straight	.10	.10	.10	.13	.17	.22	.34	.43	.68	1.20†	1.70†	2.60†	3.10†	5.55†	7.80†
Reducing	...	.12	.12	.14	.20	.25	.38	.48	.75	1.30†	1.90†	2.85†	3.45†	6.10†	8.60†
Street, Straight	...	.12†	.12†	.16†	.20†	.26†	.39†	.50†	.78†	1.37†	1.95†	....	3.60†	....	....
Street, Reducing	...	...	...	.17†	.22†	.29†	.43†	.55†	.86†	1.50†	2.15†	....	3.95†	....	....
Four-Way	...	.21†	.21‡	.26‡	.34‡	.44‡	.68‡	.86‡	1.35‡	....	....	....	....	....	....
Female Drop, Straight	...	...	.13‡	.20‡	.28‡	...	...	...	....	....	....	....	....	....	....
Female Drop, Reducing	...	...	.14‡	.22‡	.31‡	.42‡	...	...	....	....	....	....	....	....	....
M.&F. Short Drop, Straight	...	...	.13‡	...	...	...	...	...	....	....	....	....	....	....	....
M.&F. Short Drop, Reducing	...	...	.14‡	.22‡	.31‡	.42‡	...	...	....	....	....	....	....	....	....
M.&F. Long Drop, Straight	...	...	.16‡	...	...	...	...	...	....	....	....	....	....	....	....
M.&F. Long Drop, Reducing	...	...	...	...	.38‡	.52‡	.85‡	...	....	....	....	....	....	....	....
Crosses, Straight	.14†	.14	.14	.17	.23	.30	.46	.57	.90	1.65†	2.30†	3.45†	4.10†	7.40†	10.60†
Reducing	...	.16†	.15	.18	.26	.33	.50	.62	1.00	1.85†	2.55†	....	4.50†	....	11.70†
Y Bends, 45° Straight	...	...	.13†	.18†	.23†	.33†	.52	.75	1.10	2.00†	3.65†	....	6.25†	....	.....
45° Reducing	...	...	...	...	...	.36†	.57†	.82	1.25	2.20†	4.05†	....	....	11.70†	16.90†
60° Straight	...	...	...	...	...	...	...	...	1.30‡	....	....	....	....	.....	.....
Reducers	...	.07	.07	.08	.12	.16	.20	.23	.36†	.65†	1.00†	1.45†	1.85†	3.25†	4.70†
Couplings, R.H.	.07	.07	.07	.08	.12	.16	.21	.27	.44	.78†	1.10†	1.60†	1.95†	2.60†	3.95†
R.&L.	.07†	.07†	.07†	.08†	.12†	.16†	.21†	.27†	.44†	.78†	1.10†	....	....	....	....
Caps	.05§‡	.05§	.05§	.07	.10	.13	.17†	.23†	.33†	.52†	.78†	1.05†	1.45†	2.35†	3.50†
Locknuts, Hexagonal	.03½	.03½	.03½	.04	.05	.08	.10	.13	.16	.39	.50	.56	.62‖	....	....
Bushings, Hexagon	...	.08	.08	.08	.10	.12	.14	.18	.28	.42	....	....	....	....	....
Face	...	.12*	.12*	.14*	.17*	.20	.25	.33	.48	.72	1.05	1.80	2.25	3.90	5.60
Return Bends, Close, R.H.	...	...	...	.21†	.23†	.31†	.47†	.64†	1.05†	....	....	....	....	....	....
Close, R.&L.	...	...	...	.23†	.27†	.36†	.55†	.73†	1.20†	....	....	....	....	....	....
Medium, R.H.	...	...	...	.22†	.26†	.34†	.52†	.72†	1.15†	....	....	....	....	....	....
Medium, R.&L.	...	...	...	.25†	.30†	.39†	.60†	.82†	1.30†	....	....	....	....	....	....
Open, R.H.	...	...	...	.25†	.29†	.38†	.57†	.80†	1.30†	1.90†	2.80†	....	7.55†	....	....
Open, R.&L.	...	...	...	.29†	.34†	.44†	.66†	.90†	1.50†	2.15†	3.20†	....	....	....	....
Special Wide, R.H.	...	...	.30†	...	1.35†.	1.70†	1.70†	2.75†	4.00†.	....	6.50†	....	....	....	21.00†
Extension Pieces, Straight	...	...	.07‡	.09‡	.14‡	.21‡	.23‡	.30‡	.43‡	....	....	....	....	....	....
Reducing	...	...	...	.09‡	.14‡	...	...	...	....	....	....	....	....	....	....
Waste Nuts	.05	.05	.05	.05	.07	.08	.14	.22	.53	....	....	....	....	....	....
Chandelier Loops, Male	...	...	...	...	...	...	...	...	....	....	....	....	....	....	....
Chandelier Hooks, Male or Female	...	...	...	...	...	...	...	...	....	....	....	....	....	....	....
Wall Plates	...	...	...	...	...	...	...	...	....	....	....	....	....	....	....
Offsets	...	...	...	...	.26†	.39†	.65†	...	....	....	....	....	....	....	....

*Made of steel. †Banded only. ‡Plain only. §Plain style made of steel. ‖Octagonal.

¶With 6-inch center to center dimension: ¾-inch size $1.65; 2-inch size $5.00.

Malleable Cross Overs

No. 138

Size Inches	Price, Each Black	Price, Each Galvanized
1/2	$.20	$.25
3/4	.30	.40
1	.45	.60

Malleable Cross Overs

With Back Outlet

No. 141

Size In.	To Cross Pipe Inches	Price, Each Black	Price, Each Galv.
1/2	1/2	$.23	$.30
3/4	3/4	.38	.50
1	1	.55	.75

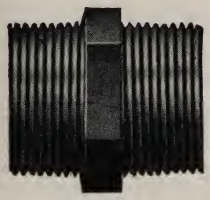
Malleable Cross Over Tees

Made of galvanized iron.

No. 139

Size Inches	Each	Size Inches	Each
1/2	$.38	3/4	$.56

Malleable R & L Hexagon Nipples



No. 137

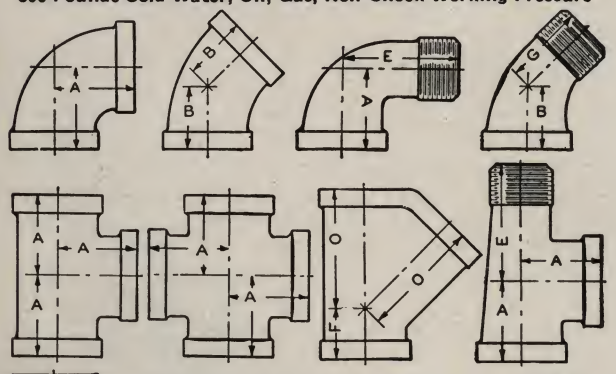
Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
1/4	$.20	1	$.30	2 1/2	$1.10
3/8	.20	1 1/4	.40	3	1.50
1/2	.20	1 1/2	.50	3 1/2	1.90
3/4	.25	2	.70	4	2.40

Right-hand at special prices.

Standard Malleable Fittings

Banded Fittings

150 Pounds Steam Working Pressure
300 Pounds Cold Water, Oil, Gas, Non-Shock Working Pressure



Dimensions subject to slight variation and change without notice.

General Dimensions

Size In.	A	B	C	D	E	F	G	O
	Dimensions, Inches							
1/8	11/16	11/16	15/16	....	1	5/16	13/16	1
1/4	13/16	3/4	1 1/16	1	1 3/16	7/16	15/16	1 3/16
3/8	15/16	13/16	1 3/16	1 1/8	1 7/16	1/2	1	1 7/16
1/2	1 1/8	7/8	1 5/16	1 1/4	1 5/8	5/8	1 1/8	1 11/16
3/4	1 5/16	1	1 1/2	1 7/16	1 7/8	11/16	1 5/16	2 1/16
1	1 1/2	1 1/8	1 11/16	1 11/16	2 1/8	7/8	1 7/16	2 7/16
1 1/4	1 3/4	1 5/16	1 15/16	2 1/16	2 7/16	1	1 11/16	2 15/16
1 1/2	1 15/16	1 7/16	2 1/8	2 5/16	2 11/16	1 1/8	1 7/8	3 1/4
2	2 1/4	1 11/16	2 1/2	2 13/16	3 1/4	1 1/4	2 1/4	3 15/16
2 1/2	2 11/16	1 15/16	2 7/8	3 1/4	3 7/8	1 1/2	2 9/16	4 3/4
3	3 1/16	2 3/16	3 3/16	3 11/16	4 1/2	1 11/16	3	5 9/16
4	3 13/16	2 5/8	3 11/16	4 3/8	5 11/16	2	3 11/16	7
5	4 1/2	3 1/16	4 3/16	5 1/8	6 7/8	2 5/16	4 7/16	8 7/16
6	5 1/8	3 7/16	4 3/4	5 7/8	8	2 11/16	5 3/16	9 13/16

Malleable Iron Fittings

Approximate Weight of Black Malleable Iron Fittings

Weight in Pounds per 100 Pieces

Size In.	Elbows Plain	Elbows Banded	Elbows Street	Elbows 45°	Elbows Side Outlet Plain	Drop Elbows Fem.	Drop Elbows M. and F.
1/8	7	6 1/2	6 1/4	7 1/4	...	..	..
1/4	9	10	7 1/2	11	12	16	..
3/8	14	17	16	17	19	18	24
1/2	22	26	24	22	29	27	35
3/4	37	41	38	35	49	52	..
1	51	58	60	53	70	..	..
1 1/4	90	106	95	87	125	..	..
1 1/2	120	136	131	115	170	..	..
2	192	226	221	200	260	..	..
2 1/2	...	355	330	300	...	..	..
3	...	510	540	445	...	..	..
3 1/2	...	700	815	620	...	..	..
4	...	940	980	790	...	..	..
5	...	1510	1410	1275	...	..	..
6	...	2420	2400	2040	...	..	..

Size In.	Tees Plain	Tees Banded	Tees Service	Tees 4-Way	Drop Tees Fem.	Drop Tees M. and F.	Crosses Plain	Crosses Banded
1/8	8	9 1/2	...	...	..	..	...	12
1/4	12	15	14	14	..	..	16	19
3/8	20	23	24	24	20	19	23	28
1/2	30	36	33	37	35	..	36	43
3/4	48	55	54	57	51	..	56	68
1	70	85	80	85	..	..	78	100
1 1/4	116	140	130	145	..	..	142	165
1 1/2	158	185	170	185	..	..	179	210
2	265	300	295	315	..	..	307	350
2 1/2	...	475	480	...	..	..	...	525
3	...	700	695	...	..	..	...	775
3 1/2	...	940	932	...	..	..	...	1065
4	...	1220	1210	...	..	..	...	1340
5	...	2050	...	...	..	..	...	2350
6	...	3010	...	...	..	..	...	3570

Size In.	Y's Plain	Y's Banded	Caps Plain	Caps Banded	Reducers Plain	Reducers Banded	Cross-overs	Wash Tray Tees
1/8	...	....	..	3	..	.....	...	..
1/4	...	....	5	5	6	7 1/2	...	..
3/8	...	28	7	9	9	12	...	..
1/2	...	46	12	14	16	16	48	52
3/4	...	66	20	27	20	27	85	80
1	...	110	32	35	33	42	115	..
1 1/4	170	185	..	58	60	61	...	..
1 1/2	240	260	..	78	77	87	...	..
2	392	410	..	125	..	150	...	..
2 1/2	...	625	..	190	..	260	...	..
3	...	1055	..	290	..	405	...	..
3 1/2	...	....	..	390	..	555	...	..
4	...	1750	..	455	..	710	...	..
5	...	....	..	770	..	...	...	..
6	...	....	..	1110	..	...	...	..

Size In.	Return Bends C.P.	Return Bends Med.	Return Bends O.P.	Couplings Banded R. and L.	Couplings Plain R.H.	Couplings Banded R.H.	Lock Nuts	Off-sets
1/8	...	...	....	...	...	...	2 1/4	...
1/4	...	...	....	8 1/2	7	8 1/2	3 1/4	...
3/8	...	...	....	14	11	13	4 1/2	...
1/2	36	41	43	18	15	18	6 1/2	...
3/4	58	60	80	29	24	29	11	56
1	92	95	115	47	36	43	16	120
1 1/4	135	155	195	76	63	70	26	180
1 1/2	185	220	295	100	85	100	35	...
2	325	380	445	170	143	170	51	...
2 1/2	...	...	695	255	...	250	..	...
3	...	...	1060	340	...	330	..	...
3 1/2	...	...	....	...	...	460	..	...

Walworth A.A.R. Malleable Iron Fittings

Developed for Railroad Service at the Instigation of the American Association of Railroads

300 Pounds Service Steam Pressure at 550°F.

No. 7300 90° Elbows

Size In.	Each	Size In.	Each
1/4	$.20	1 1/4	$.55
3/8	.25	1 1/2	.70
1/2	.30	2	.90
3/4	.35	2 1/2	1.50
1	.40	3	2.40

No. 7300 90° Reducing Elbows

Stock Sizes

Size Inches	Each
1/2x 3/8	$.30
3/4x 1/2	.35
1 x 3/4	.40
1 1/4x1	.55
1 1/2x1 1/4	.70
2 x1 1/2	.90
2 1/2x2	1.50
3 x2 1/2	2.40

No. 7301 45° Elbows

Size In.	Each	Size In.	Each
1/4	$.25	1 1/4	$.65
3/8	.30	1 1/2	.85
1/2	.35	2	1.10
3/4	.42	2 1/7	1.85
1	.50	3	2.85

No. 7302 90° Street Elbows

Size In.	Each	Size In.	Each
1/4	$.25	1 1/4	$.70
3/8	.30	1 1/2	.90
1/2	.40	2	1.25
3/4	.45	2 1/2	2.10
1	.50	3	3.10

No. 7313 45° Street Elbows

Size In.	Each	Size In.	Each
1/4	$.31	1	$.63
3/8	.38	1 1/4	.88
1/2	.50	1 1/2	1.12
3/4	.56	2	1.55

No. 7314 Caps

Size In.	Each	Size In.	Each
1/4	$.16	1 1/4	$.38
3/8	.17	1 1/2	.50
1/2	.19	2	.65
3/4	.23	2 1/2	1.00
1	.29	3	1.35

No. 7304 Tees

Size In.	Each	Size In.	Each
1/4	$.30	1 1/4	$.80
3/8	.40	1 1/2	1.05
1/2	.45	2	1.35
3/4	.50	2 1/2	2.25
1	.60	3	3.60

No. 7304 Reducing Tees

Stock Sizes

Size, Inches	Each
1/2x 1/2x 3/8	$.45
1/2x 3/8x 1/2	.45
3/4x 3/4x 1/2	.50
3/4x 1/2x 3/4	.50
1 x1 x 3/4	.60
1 x1 x 1/2	.60
1 x1 x 3/8	.60
1 x 3/4x1	.60
1 1/4x1 1/4x1	.80
1 1/4x1 1/4x 3/4	.80
1 1/4x1 1/4x 1/2	.80
1 1/4x1 x1 1/4	.80
1 1/2x1 1/2x1 1/4	1.05
1 1/2x1 1/2x1	1.05
1 1/2x1 1/2x 3/4	1.05
1 1/2x1 1/2x 1/2	1.05
1 1/2x1 1/4x1 1/2	1.05
2 x2 x1 1/2	1.35
2 x2 x1 1/4	1.35
2 x2 x1	1.35
2 x2 x 3/4	1.35
2 x2 x 1/2	1.35
2 x1 1/2x2	1.35
2 1/2x2 1/2x2	2.25
2 1/2x2 1/2x1 1/2	2.25
2 1/2x2 x2 1/2	2.25
3 x3 x2 1/2	3.60
3 x3 x2	3.60
3 x2 1/2x3	3.60

For galvanized fittings, add 50% to above lists.

Walworth A.A.R. Malleable Iron Fittings

Developed for Railroad Service at the Instigation of the American Association of Railroads

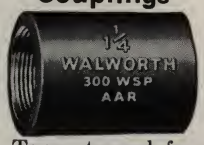
300 Pounds Service Steam Pressure at 550°F.

No. 7306 Crosses

Size In.	Each	Size In.	Each
1/4	$.60	1 1/4	$1.60
3/8	.80	1 1/2	2.10
1/2	.90	2	2.70
3/4	1.00	2 1/2	4.50
1	1.20	3	7.20

Reducing crosses to order.

No. 7310 Couplings



Taper tapped from both ends; has recess inside of thread.

Size In.	Each	Size In.	Each
1/4	$.14	1 1/4	$.34
3/8	.14	1 1/2	.42
1/2	.14	2	.56
3/4	.20	2 1/2	.80
1	.26	3	1.20

No. 7308 Reducing Couplings

Stock Sizes

Size Inches	Each	Size Inches	Each
3/8x 1/4	$.25	1 1/2x 3/8	$.55
1/2x 3/8	.28	1 1/2x 1/4	.55
1/2x 1/4	.28	2 x1 1/2	.70
3/4x 1/2	.30	2 x1 1/4	.70
3/4x 3/8	.30	2 x1	.70
3/4x 1/4	.30	2 x 3/4	.70
1 x 3/4	.40	2 x 1/2	.70
1 x 1/2	.40	2 x 3/8	.70
1 x 3/8	.40	2 x 1/4	.70
1 x 1/4	.40	2 1/2x2	1.30
1 1/4x1	.45	2 1/2x1 1/2	1.30
1 1/4x 3/4	.45	2 1/2x1 1/4	1.30
1 1/4x 1/2	.45	2 1/2x1	1.30
1 1/4x 3/8	.45	3 x2 1/2	2.25
1 1/4x 1/4	.45	3 x2	2.25
1 1/2x1 1/4	.55	3 x1 1/2	2.25
1 1/2x1	.55	3 x1 1/4	2.25
1 1/2x 3/4	.55	3 x1	2.25
1 1/2x 1/2	.55	.....	....

For galvanized fittings, add 50% to above lists.

Walworth Hydraulic Malleable Iron Fittings

Non-Shock Service Cold Oil, Water or Gas Pressures:
1" and Smaller, 2000 Pounds — 2 1/2" to 4", 1000 Pounds
1 1/4" to 2", 1500 Pounds — 6", 800 Pounds

No. 7165, 90° Elbows

Size In.	Each	Ctr. to End In.	Size In.	Each	Ctr. to End In.
1/4	$.25	1 1/32	1 1/2	$.70	2 9/16
3/8	.25	1 1/4	2	.90	3 1/16
1/2	.30	1 1/2	2 1/2	1.50	3 9/16
3/4	.35	1 3/4	3	2.40	4 5/32
1	.40	2 1/32	4	4.25	5 5/32
1 1/4	.55	2 9/32	6	9.50	7 7/32

No. 7167 Tees

Size In.	Each	Ctr. to End In.	Size In.	Each	Ctr. to End In.
1/4	$.40	1 1/32	1 1/2	$1.05	2 9/16
3/8	.40	1 1/4	2	1.35	3 1/16
1/2	.45	1 1/2	2 1/2	2.25	3 9/16
3/4	.50	1 3/4	3	3.60	4 5/32
1	.60	2 1/32	4	6.50	5 5/32
1 1/4	.80	2 9/32	6	14.25	7 7/32

No. 7168 Crosses

Size In.	Each	Ctr. to End In.	Size In.	Each	Ctr. to End In.
1/4	$.80	1 1/32	1 1/2	$2.10	2 9/16
3/8	.80	1 1/4	2	2.70	3 1/16
1/2	.90	1 1/2	2 1/2	4.50	3 9/16
3/4	1.00	1 3/4	3	7.20	4 5/32
1	1.20	2 1/32	4	13.00	5 7/32
1 1/4	1.60	2 9/32	...	.....	...

For galvanized fittings, add 50% to above list.

For reducing fittings and types and sizes not listed above, 300-pound malleable iron fittings are recommended.

300-Pound Malleable Iron Fittings

300 Pounds Steam or Oil Pressure at 550° F.
1 Inch and Smaller: 2000 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure
1¼ to 2 Inches: 1500 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure
2½ to 3½ Inches: 1000 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure

No. 200, 90° Elbow

No. 201, 45° Elbow

No. 203 Tee

No. 205 Cross

90° Elbows

Size Inches	Each	Center to End Inches
¼	$.25	15/16
⅜	.25	1 1/16
½	.30	1¼
¾	.35	1 7/16
1	.40	1⅝
1¼	.55	1 15/16
1½	.70	2⅛
2	.90	2½
2½	1.50	3¼
3	2.40	3¾
3½	3.25	4⅛

90° Reducing Elbows

⅜x ¼	$.25	....
½x ⅜	.30	....
¾x ½	.35	....
¾x ⅜	.35	....
1 x ¾	.40	....
1 x ½	.40	....
1¼x1	.55	....
1¼x ¾	.55	....
1¼x ½	.55	....
1½x1¼	.70	....
1½x1	.70	....
2 x1½	.90	....
2 x1¼	.90	....
2 x1	.90	....
2 x ¾	.90	....
2 x ½	.90	....
2½x2	1.50	....
2½x1½	1.50	....
3 x2½	2.40	....
3 x2	2.40	....

45° Elbows

¼	$.30	3/16
⅜	.30	⅞
½	.35	1
¾	.42	1⅛
1	.50	15/16
1¼	.65	1½
1½	.85	1 11/16
2	1.10	2
2½	1.85	2¼
3	2.85	2½
3½	4.00	2½

Caps

Size Inches	Each	Center to End Inches
¼	$.17	....
⅜	.17	....
½	.19	....
¾	.23	....
1	.29	....
1¼	.38	....
1½	.50	....
2	.65	....
2½	1.00	....
3	1.35	....

Tees

¼	$.40	15/16
⅜	.40	1 1/16
½	.45	1¼
¾	.50	1 7/16
1	.60	1⅝
1¼	.80	1 15/16
1½	1.05	2⅛
2	1.35	2½
2½	2.25	3¼
3	3.60	3¾
3½	5.00	4⅛

Reducing Tees

⅜x⅜x¼	$.40	....
¼x¼x⅜	.40	....
½x½x⅜	.45	....
½x½x¼	.45	....
½x⅜x½	.45	....
½x¼x⅛	.45	....
⅜x⅜x½	.45	....
¾x¾x½	.50	....
¾x¾x⅜	.50	....
¾x¾x¼	.50	....
¾x½x¾	.50	....
¾x½x½	.50	....
¾x⅜x¾	.50	....
¾x¼x¾	.50	....
½x½x¾	.50	....
⅜x⅜x¾	.50	....
1 x1 x¾	.60	....
1 x1 x½	.60	....
1 x1 x⅜	.60	....

Continued

Reducing Tees
Continued

Size Inches	Each
1 x1 x ¼	$.60
1 x ¾x1	.60
1 x ¾x ¾	.60
1 x ¾x ½	.60
1 x ½x1	.60
¾x ¾x1	.60
½x ½x1	.60
1¼x1¼x1	.80
1¼x1¼x ¾	.80
1¼x1¼x ½	.80
1¼x1¼x ⅜	.80
1¼x1 x1¼	.80
1¼x1 x1	.80
1¼x ¾x1¼	.80
1¼x ¾x ½	.80
1¼x ½x1¼	.80
1¼x ⅜x1¼	.80
1 x1 x1¼	.80
¾x ¾x1¼	.80
1½x1½x1¼	1.05
1½x1½x1	1.05
1½x1½x ¾	1.05
1½x1½x ½	1.05
1½x1½x ⅜	1.05
1½x1¼x1½	1.05
1½x ¾x1½	1.05
1½x ½x1½	1.05
1½x ⅜x1½	1.05
1¼x1¼x1½	1.05
1 x1 x1½	1.05
2 x2 x1½	1.35
2 x2 1¼	1.35
2 x2 x1	1.35
2 x2 x ¾	1.35
2 x2 x ½	1.35
2 x2 x ¼	1.35
2 x2 x ⅜	1.35
2 x1½x2	1.35
2 x1 x2	1.35
2 x ½x2	1.35
1½x1½x2	1.35
1¼x1¼x2	1.35
2½x2½x2	2.25
2½x2½x1½	2.25
2½x2 x2½	2.25
2 x2 x2½	2.25
3 x3 x2½	3.60

Continued

Reducing Tees
Continued

Size Inches	Each	Center to End Inches
3 x3 x2	$3.60	...
3 x3 x1½	3.60	...
3 x2½x3	3.60	...
3 x2 x3	3.60	...
2½x2½x3	3.60	...

Crosses

¼	$.80	15/16
⅜	.80	1 1/16
½	.90	1¼
¾	1.00	1 7/16
1	1.20	1⅝
1¼	1.60	1 15/16
1½	2.10	2⅛
2	2.70	2½
2½	4.50	3¼
3	7.20	3¾
3½	10.00	4⅛
4	13.00	4½

Couplings

Size Inches	Each	End to End Inches
¼	$.14	1⅜
⅜	.14	1⅝
½	.14	1⅞
¾	.20	2⅛
1	.26	2⅜
1¼	.34	2⅞
1½	.42	2⅞
2	.56	3⅝
2½	.80	4⅛
3	1.20	4⅛

Reducing Couplings

⅜x ¼	$.25	1 7/16
½x ⅜	.28	1 11/16
½x ¼	.28	1 11/16
¾x ½	.30	1¾
¾x ⅜	.30	1¾
¾x ¼	.30	1¾
1 x ¾	.40	2
1 x ½	.40	2
1 x ⅜	.40	2
1 x ¼	.40	2
1¼x1	.45	2⅜

Continued

Reducing Couplings—Continued

Size Inches	Each	End to End Inches
1¼x ¾	$.45	2⅜
1¼x ½	.45	2⅜
1¼x ⅜	.45	2⅜
1¼x ¼	.45	2⅜
1½x1¼	.55	2 11/16
1½x1	.55	2 11/16
1½x ¾	.55	2 11/16
1½x ½	.55	2 11/16
1½x ⅜	.55	....
1½x¼	.55	....
2 x1½	.70	3 3/16
2 x1¼	.70	3 3/16
2 x1	.70	3 3/16
2 x ¾	.70	3 3/16
2 x ½	.70	3 3/16
2 x ⅜	.70	....
2 x ¼	.70	3 3/16
2½x2	1.30	3 11/16
2½x1½	1.30	3 11/16
2½x1¼	1.30	3 11/16
2½x1	1.30	3 11/16
3 x2½	2.25	4 1/16
3 x2	2.25	4 1/16
3 x1½	2.25	4 1/16

Return Bends

Size In.	Each	Ctr. to Ctr. In.	End to Back In.
1	$.60	1¾	2 5/16
1	.75	2½	2¾
1	.85	3	3⅛
1¼	.90	2¼	3
1¼	.95	2½	3½
1¼	1.00	3	3½
1¼	1.15	3½	3 15/16
1¼	1.20	4	3⅝
1¼	1.55	6	5
1½	1.15	3	3 9/16
1½	1.25	3½	3 15/16
1½	1.75	6	4¼
1½	2.00	8	4 15/16
2	1.25	3	4⅝
2	1.30	3½	4½
2	1.90	4	4¾
2	2.25	4⅝	4¼
2	3.25	6	4½
2	3.50	8	5¼

These fittings carry beads of large diameter and are of greater length than fittings of the usual types.

Thread lengths are made with extra long thread, which assures the making of tight joints without difficulty.

For galvanized fittings, add 50% to the above prices.

Heavy Malleable Iron Fittings

4 and 6 Inches: 300 Pounds Steam or Oil Pressure at 550°F.
8 to 12 Inches: 250 Pounds Steam or Oil Pressure at 550°F.
4 Inches: 1000 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure
5 to 10 Inches: 800 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure
12 Inches: 600 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure

90° Elbows

Size Inches	Each	Center to End Inches
4	$4.25	4½
5	6.50	5½
6	11.00	6¼
8	21.00	7¾
10	37.00	9¼
12	60.00	11½
*5 13/16	8.00	5½
*6⅝	19.00	6½

90° Reducing Elbows

4x 3	$4.25	....
4x 2	4.25	....
6x 4	11.00	....
8x 6	21.00	....
10x 8	37.00	....
12x10	60.00	....

45° Elbows

4	$5.00	2 13/16
5	7.50	3⅛
6	12.75	3½

Continued

45° Elbows
Continued

Size Inches	Each	Center to End Inches
8	$26.00	4 5/16
10	45.00	5 3/16
12	72.00	6

Tees

4	$6.50	4½
5	9.75	5½
6	16.50	6¼
8	32.00	7¾
10	55.00	9¼
12	90.00	11½
*5 13/16	12.00	5½
*6⅝	18.00	6½

Reducing Tees

4x4x3	$6.50	....
4x4x2½	6.50	....
4x4x2	6.50	....
4x4x1½	6.50	....
4x4x1¼	6.50	....
4x4x1	6.50	....

Continued

Reducing Tees
Continued

Size Inches	Each
4x 4x ¾	$6.50
4x 3x 4	6.50
4x 2x 4	6.50
4x 1x 4	6.50
6x 6x 4	16.50
6x 6x 3	16.50
6x 6x 2	16.50
6x 4x 6	16.50
6x 3x 6	16.50
8x 8x 6	32.00
8x 8x 4	32.00
8x 8x 3	32.00
8x 8x 2½	32.00
8x 8x 2	32.00
8x 6x 8	32.00
10x10x 8	55.00
10x10x 6	55.00
10x10x 4	55.00
10x10x 3	55.00
10x 8x10	55.00

Continued

Reducing Tees
Continued

Size Inches	Each	Center to End Inches
10x 6x10	$55.00	...
12x12x10	90.00	...
12x12x 8	90.00	...
12x12x 6	90.00	...
12x10x12	90.00	...
12x 8x12	90.00	...
12x 6x12	90.00	...

Crosses

4	$13.00	4½
6	33.00	6¼
8	63.00	7¾

Reducing Couplings

Size Inches	Each	End to End Inches
4x3	$4.25	4⅜
4x2½	4.25	4⅜
4x2	4.25	4⅜
4x1½	4.25	4⅜

Continued

Reducing Couplings
Continued

Size Inches	Each	End to End Inches
4x 1¼	$4.25	4⅜
4x 1	4.25	4⅜
6x 5	9.00	5¼
6x 4	9.00	5¼
6x 3	9.00	5¼
6x 2½	9.00	5¼
6x 2	9.00	5¼
6x 1½	9.00	5¼
6x 1	9.00	5¼
8x 6	16.00	5¼
8x 5	16.00	6¼
8x 4	16.00	5¼
8x 3	16.00	5¼
8x 2½	16.00	6¼
8x 2	16.00	6¼
10x 8	23.00	6¼
10x 6	23.00	7⅛
12x10	39.00	7⅛
12x 8	39.00	7⅛

*When ordering casing sizes, specify outside diameter of casing, number of threads per inch and style of casing.

These fittings carry beads of large diameter and are of greater length than fittings of the usual types.

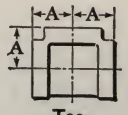
Thread lengths are made with extra long thread, which assures the making of tight joints without difficulty.

For galvanized fittings, add 50% to the above prices.

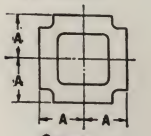
General Dimensions of Malleable Iron Fittings

90° Elbow

45° Elbow



Tee



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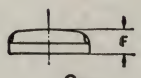
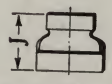


Cap



Reducing Coupling

300-Pound

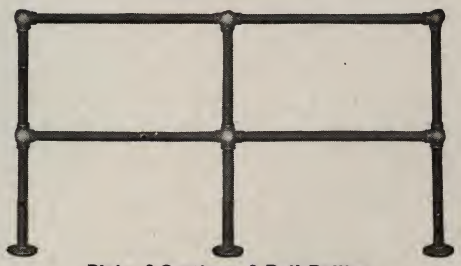
Size Inches	Dimensions, Inches A	B	J	F	Coupling Lgth., In.
¼	15/16	13/16	...	¾	1⅜
⅜	1 1/16	⅞	1 7/16	⅞	1⅝
½	1¼	1	1 11/16	1	1⅞
¾	1 7/16	1⅛	1¾	1 1/16	2⅛
1	1⅝	1 5/16	2	1¼	2⅜
1¼	1 15/16	1½	2⅜	1⅜	2⅞
1½	2⅛	1 41/16	2 11/16	1 7/16	2⅞
2	2½	2	3 3/16	1 11/16	3⅝
2½	3¼	2¼	3 11/16	2 1/16	4⅛
3	3½	2½	4 1/16	2 3/16	4⅛
3½	4⅛	2½	...	...	...
4	4½	2 13/16	4⅜	...	...
5	5½	3⅛	...	...	...
6	6¼	3½	5¼	...	...
8	7¾	4 5/16	6¼	...	...
10	9¼	5 3/16	7⅛	...	...
12	11½	6	8	...	...
*5 3/16	5½	...	...	...	...
*6⅝	6½	...	...	...	...

*Casing sizes.

Use the Telephone and Save Time

We are organized to give special service on telephone orders.

Pipe Railings



Plain, 2 Sections, 2 Rail Railing

Customers are invited to submit sketch or blue print showing any arrangement of railing desired. We shall be pleased to quote prices on railings cut to measure and ready for erection.

Walworth Malleable Iron Railing Fittings

Combination Angle—Screw and Slip Joint

Illustration Numbers Shown on Top of Cuts

These fittings are for use on railings between 27½° and 47½° angles with horizontal or floor line.

30° fittings for railing between 27½° and 32½° angles,

35° fittings for railings between 32½° and 37½° angles,

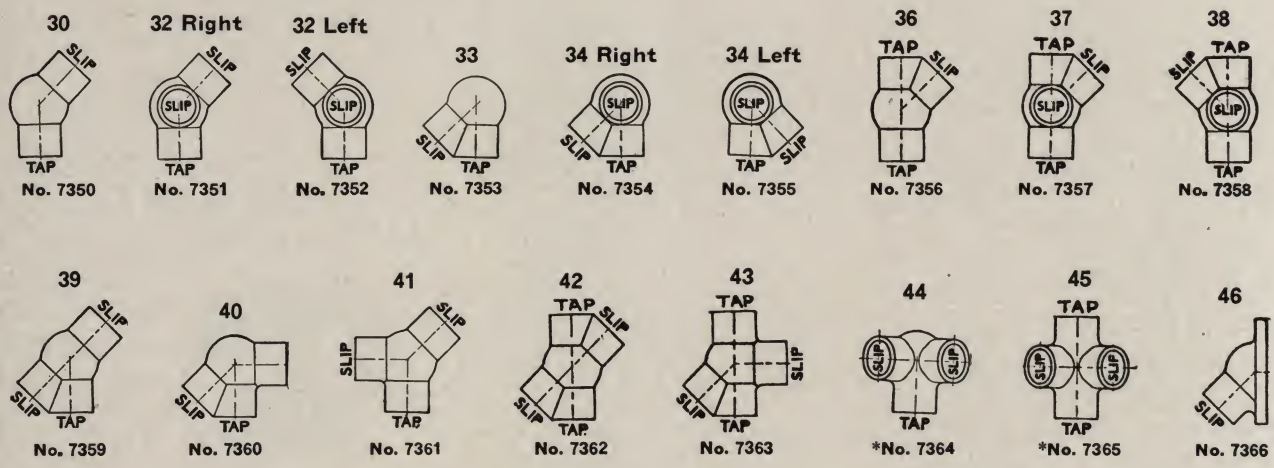
40° fittings for railings between 37½° and 42½° angles,

45° fittings for between 42½° and 47½° angles.

Threaded in vertical openings for posts. Openings for rails, either angle or horizontal are for slip joints, allowing a 2½° swing either way from the 30°, 35°, 40° or 45° angle when pipe enters fitting only sufficient distance for pinning.

Can be furnished tapped in all openings to the same range of angles given for slip joints, but after being tapped to the special angle no further adjustment can be obtained. Prices upon application.

For setting up, posts are first screwed together, then rails are fitted and riveted.



Prices

Size.....inches	1	1¼	1½	2
No. 7350, Elbow.....each	$1.10	$1.25	$1.70	$2.25
No. 7351, Side Outlet Elbow.....each	....	1.95	2.70	3.35
No. 7352, Side Outlet Elbow.....each	....	1.95	2.70	3.35
No. 7353, Elbow.....each	....	1.25	1.70	2.25
No. 7354, Side Outlet Elbow.....each	....	1.95	2.70	3.35
No. 7355, Side Outlet Elbow.....each	....	1.95	2.70	3.35
No. 7356, Tee.....each	....	1.50	2.00	2.50
No. 7357, Side Outlet Tee.....each	....	2.20	3.00	3.60
No. 7358, Side Outlet Tee.....each	....	2.20	3.00	3.60
No. 7359, Tee.....each	1.30	1.50	2.00	2.50
No. 7360, Tee.....each	1.30	1.50	2.00	2.50
No. 7361, Tee.....each	1.30	1.50	2.00	2.50
No. 7362, Cross.....each	....	1.75	2.35	2.75
No. 7363, Cross.....each	1.50	1.75	2.35	2.75
*No. 7364, Tee.....each	....	1.95	2.70	3.35
*No. 7365, Cross.....each	....	1.75	2.35	2.75
No. 7366, Flange.....each	....	1.75	1.90	2.25

Fitting Dimensions, Inches

Center to End without Side Outlets

Size Inches	30°	35°	40°	45°
1	...	...	...	2⅜
1¼	2½	2½	2½	2 13/16
1½	3⅛	3⅛	3⅛	3¼
2	3¾	3¾	3¾	3¾

Center to Side Outlet End

Size Inches	30°	35°	40°	45°
1	...	...	...	1½
1¼	2⅛	2⅛	2⅛	2⅛
1½	2½	2½	2½	2½
2	3	3	3	3¼

Center to Face of Flange

Size Inches	30°	35°	40°	45°
1	...	...	...	1½
1¼	2¼	2¼	2¼	2¼
1½	2½	2½	2½	2½
2	3	3	3	3

*The angle between the outlets designated as "Slip" in cuts No. 7364 and No. 7365 is equal to 90° plus 30°, 40° or 45° as ordered.

For galvanized fittings add 30 per cent to above lists.

Malleable Iron Ball Pattern Railing Fittings

No. 1 90° Elbows

Size Inches	Black Each	Galv. Each	Size Inches	Black Each	Galv. Each
½	$.10	$.13	1½	$.30	$.39
¾	.12	.15	2	.44	.57
1	.14	.18	2½	1.00	1.30
1¼	.22	.29	3	2.00	2.60

No. 10 45° Elbows

¾	$.15	$.20	2	$.65	$.85
1	.20	.26	2½	1.40	1.85
1¼	.30	.39	3	2.50	3.25
1½	.40	.52	...	....	....

No. 2 90° Side Outlet Elbows

½	$.19	$.25	1½	$.60	$.78
¾	.23	.30	2	.88	1.15
1	.28	.36	2½	2.00	2.60
1¼	.44	.57	3	3.35	4.35

No. 11A 45° Side Outlet Elbows

¾	$.30	$.40	2	$1.20	$1.55
1	.40	.52	2½	2.50	3.25
1¼	.60	.78	3	4.00	5.20
1½	.80	1.05	...	....	....

No. 5 Crosses

½	$.18	$.23	1½	$.53	$.70
¾	.21	.27	2	.77	1.00
1	.25	.33	2½	1.75	2.30
1¼	.38	.49	3	3.40	4.45

No. 6 Side Outlet Crosses

½	$.32	$.42	1½	$1.00	$1.30
¾	.38	.50	2	1.45	1.90
1	.46	.60	2½	3.15	4.10
1¼	.70	.91	3	6.00	7.80

No. 3 Tees

Size Inches	Black Each	Galv. Each	Size Inches	Black Each	Galv. Each
½	$.13	$.17	1½	$.40	$.52
¾	.16	.21	2	.57	.75
1	.19	.25	2½	1.30	1.70
1¼	.28	.36	3	2.60	3.40

No. 4 90° Side Outlet Tees

½	$.25	$.33	1½	$.80	$1.05
¾	.31	.40	2	1.15	1.50
1	.37	.48	2½	2.60	3.40
1¼	.57	.75	3	5.00	6.50

No. 12B 45° Side Outlet Tees

¾	$.40	$.52	2	$1.60	$2.10
1	.55	.72	2½	3.50	4.60
1¼	.80	1.05	3	5.00	6.50
1½	1.05	1.38	...	....	....

No. 7 Square Floor Flanges

½	$.12	$.16	1½	$.50	$.65
¾	.16	.21	2	.80	1.05
1	.20	.26	2½	1.55	2.00
1¼	.34	.44	3	2.75	3.60

No. 8 Ball Ornament

½	*$.12	$.16	1½	*$.38	$.50
¾	*.16	.21	2	* .60	.78
1	*.20	.26	2½	*1.25	1.65
1¼	*.28	.36	3	*2.15	2.80

*With left-hand threads when so ordered, no extra cost.

All openings tapped right hand, unless otherwise specified.

Nos. 3, 4, 5, and 6 furnished with right and left-hand threads on run at no extra charge.

Fittings with threads, other than as shown can be made to order at an advance in price.

Fittings reamed for slip joints and drilled for rivets can be made to order at an advance over regular list prices.

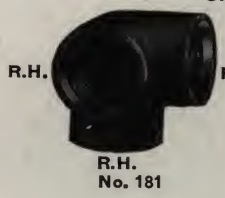
Malleable Iron Railing Fittings

Gas Pattern

90° Elbows

Size Inches	Black Each	Galvanized Each	Center to End Inches
¾	$.11	$.14	1 5/16
1	.14	.18	1 5/8
1¼	.22	.29	1 15/16
1½	.27	.35	2 3/16
2	.44	.57	2 5/16
2½	.80	1.05	2 13/16
3	1.10	1.45	2 15/16

Side Outlet Elbows



¾	$.22	$.29	1 5/16
1	.28	.36	1 5/8
1¼	.44	.57	1 15/16
1½	.55	.72	2 3/16
2	.88	1.15	2 5/16
2½	1.60	2.10	2 13/16
3	2.20	2.85	3 5/16

Tees

¾	$.14	$.18	1 3/16
1	.19	.25	1 3/8
1¼	.28	.36	1 11/16
1½	.36	.47	1 27/32
2	.57	.75	2 7/32
2½	1.00	1.30	2 21/32
3	1.45	1.90	3 1/4

Side Outlet Tees

¾	$.28	$.36	1 3/16
1	.37	.48	1 3/8
1¼	.57	.75	1 11/16
1½	.72	.95	1 27/32
2	1.15	1.50	2 7/32
2½	2.00	2.60	2 21/32
3	2.90	3.80	3 1/4

Crosses

¾	$.20	$.26	1 3/16
1	.25	.33	1 3/8
1¼	.38	.49	1 11/16
1½	.48	.62	1 27/32
2	.77	1.00	2 7/32
2½	1.40	1.85	2 21/32
3	1.95	2.55	3 1/4

Side Outlet Crosses

¾	$.35	$.45	1 3/16
1	.46	.60	1 3/8
1¼	.70	.91	1 11/16
1½	.90	1.17	1 27/32
2	1.45	1.90	2 7/32
2½	2.50	3.25	2 21/32
3	3.65	4.75	3 1/4

Tees, side outlet tees, crosses and side outlet crosses furnished with right and left hand threads on run, when so ordered, at no extra charge.

Fittings with threads other than as shown can be made to order at an advance in price over regular list prices.

Fittings reamed for slip joints and drilled for rivets can be made to order at an advance over regular list prices.

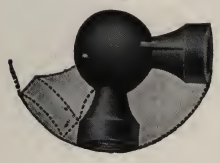
Walworth Malleable Iron Railing Fittings

Adjustable

By means of these fittings, almost any angle may be obtained in railings for stairs and other places requiring deviation from horizontal or perpendicular lines.

Regularly furnished tapped right hand.

Elbows

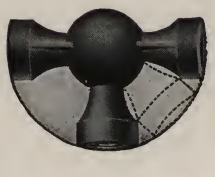


Size Inches	No. 7441 Black Each	No. 7491 Galv. Each
1	$1.10	$1.65
1¼	1.25	1.88
1½	1.70	2.55
2	2.25	3.38

Stair Tees

Size Inches	No. 7442 Black Each	No. 7492 Galv. Each
1	$1.30	$1.95
1¼	1.60	2.40
1½	2.15	3.23
2	2.50	3.75

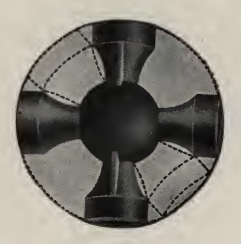
Tees



Size Inches	*No. 7443 Black Each	No. 7493 Galv. Each
1	$1.30	$1.95
1¼	1.50	2.25
1½	2.00	3.00
2	2.50	3.75

Crosses

Size Inches	*No. 7444 Black Each	No. 7494 Galv. Each
1	$1.50	$2.25
1¼	1.75	2.63
1½	2.35	3.53
2	2.75	4.13



Flanges

Size Inches	No. 7445 Black Each	No. 7495 Galv. Each
1	$1.65	$2.48
1¼	1.75	2.63
1½	1.90	2.85
2	2.50	3.75

Stair Crosses

Size Inches	*No. 7446 Black Each	No. 7496 Galv. Each
1	$1.50	$2.25
1¼	1.85	2.78
1½	2.50	3.75
2	2.75	4.13

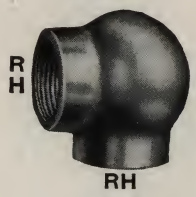
Can be furnished with side outlets, if desired. Prices upon application.

*Can be furnished with right and left threads on run at no extra charge.

Finished Brass Railing Fittings

Ball Pattern—Iron Pipe Size

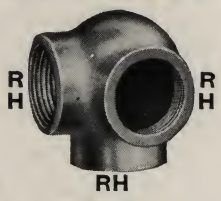
Elbows



No. 1

Size In.	Polished Each	Pol. Chrom. Plated Each	Ctr. to End In.
½	$.40	$.63	1 1/32
¾	.60	.94	1 3/16
1	.80	1.25	1 7/16
1¼	1.20	1.87	1 5/8
1½	1.60	2.50	1 27/32
2	2.50	3.75	2 5/32

Side Outlet Elbows



No. 2

Size In.	Polished Each	Pol. Chrom. Plated Each	Ctr. to End In.
½	$.75	$1.13	1 1/32
¾	1.00	1.50	1 3/16
1	1.10	1.69	1 7/16
1¼	1.70	2.56	1 5/8
1½	2.00	3.00	1 27/32
2	3.00	4.50	2 5/32

Tees

No. 3

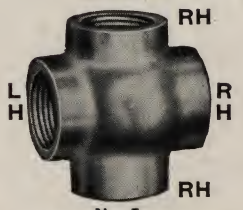
½	$.60	$.94	1 1/32
¾	.85	1.31	1 3/16
1	1.10	1.69	1 7/16
1¼	1.70	2.56	1 5/8
1½	2.00	3.00	1 27/32
2	3.00	4.50	2 5/32

Side Outlet Tees

No. 4

½	$1.05	$1.62	1 1/32
¾	1.25	1.87	1 3/16
1	1.50	2.25	1 7/16
1¼	2.00	3.00	1 5/8
1½	2.40	3.62	1 27/32
2	3.50	5.25	2 5/32

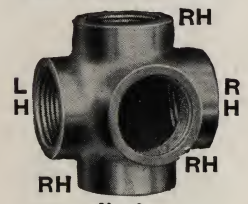
Crosses



No. 5

½	$1.05	$1.62	1 1/32
¾	1.25	1.87	1 3/16
1	1.50	2.25	1 7/16
1¼	2.00	3.00	1 5/8
1½	2.40	3.62	1 27/32
2	3.50	5.25	2 5/32

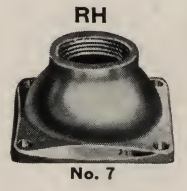
Side Outlet Crosses



No. 6

½	$1.20	$1.81	1 1/32
¾	1.45	2.19	1 3/16
1	1.70	2.56	1 7/16
1¼	2.25	3.37	1 5/8
1½	3.00	4.50	1 27/32
2	4.00	6.00	2 5/32

Globe Floor Flanges



No. 7

Size In.	Pol. Each	Pol. Chrom. Plated Each	Ht. In.
½	$.75	$1.13	1½
¾	.90	1.38	1 5/8
1	1.00	1.56	1 13/16
1¼	1.35	2.00	2
1½	1.75	2.62	2 3/16
2	2.50	3.75	2 11/16

Ball Ornaments

Male or Female

No. 8

Size In.	Pol. Each	Pol. Chrom. Plated Each
½	$.75	$1.13
¾	.90	1.38
1	1.00	1.56
1¼	1.35	2.00
1½	1.75	2.62
2	2.50	3.75

Round Floor Flanges

No. 9

Size In.	Pol. Each	Pol. Chrom. Plated Each	Diam. In.
¼	$.42	$.56	2½
⅜	.45	.60	2½
½	.53	.70	3
¾	.70	.94	3
1	1.12	1.50	4
1¼	1.27	1.70	5
1½	1.80	2.40	5
2	2.47	3.30	5

Polished nickel plated take a discount of 20 per cent beyond the chromium plated. Railing fittings furnished with all openings tapped right hand unless otherwise specified. Nos. 3, 4, 5 and 6 furnished right and left threads on run when so ordered at no extra charge. Railing fittings other than Nos. 3, 4, 5 and 6 tapped right and left or left will be charged 15 per cent additional.

Vogt Drop Forged Screwed Fittings

2000 Pounds

Carbon Steel
2000 Pounds Cold Non-Shock
600 Pounds at 900°F.

3000 Pounds

Carbon Steel
3000 Pounds Cold Non-Shock
1200 Pounds at 900°F.

Carbon Molybdenum Steel
3600 Pounds Cold Non-Shock
1325 Pounds at 900°F.

6000 Pounds

Carbon Steel
6000 Pounds Cold Non-Shock
2000 Pounds at 900F°.

Carbon Molybdenum Steel
6600 Pounds Cold Non-Shock
2125 Pounds at 900°F.

Fittings are machined from solid forgings. Order and refer to fittings by numbers. Reducing fittings can be furnished. Prices on application.

90° Ells

Size Inches	2000-Pound No.	2000-Pound Plain Each	2000-Pound Galv. Each	3000-Pound No.	3000-Pound Plain Each	3000-Pound Galv. Each	6000-Pound No.	6000-Pound Plain Each	6000-Pound Galv. Each
1/8	259	$.55	$1.10	229	$.55	$1.10	1299	$.55	$1.10
1/4	260	.55	1.10	230	.55	1.10	1300	.55	1.10
3/8	261	.55	1.10	231	.55	1.10	1301	.65	1.30
1/2	262	.65	1.30	232	.65	1.30	1302	.75	1.50
3/4	263	.75	1.50	233	.75	1.50	1303	.90	1.80
1	264	.90	1.80	234	.90	1.80	1304	1.20	2.40
1 1/4	265	1.20	2.40	235	1.20	2.40	1305	1.50	3.00
1 1/2	266	1.50	3.00	236	1.50	3.00	1306	1.90	3.80
2	267	1.90	3.80	237	1.90	3.80	1307	2.90	5.80
2 1/2	268	2.90	5.80	238	2.90	5.80	1308	5.00	10.00
3	269	5.00	10.00	239	5.00	10.00	1309	12.50	25.00
3 1/2	...	....	.....	240	12.50	25.00	1310	12.50	25.00
4	...	....	.....	241	12.50	25.00	....	.....	.....
6	...	....	.....	242	38.50	77.00	....	.....	.....

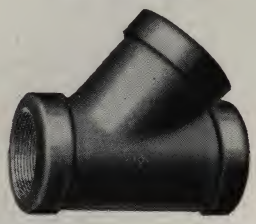
Crosses

Size Inches	3000-Pound No.	3000-Pound Plain Each	6000-Pound No.	6000-Pound Plain Each
1/8	1899	$1.10	2199	$1.10
1/4	1900	1.10	2200	1.10
3/8	1901	1.10	2201	1.30
1/2	1902	1.30	2202	1.50
3/4	1903	1.50	2203	1.90
1	1904	1.90	2204	2.80
1 1/4	1905	2.80	2205	3.50
1 1/2	1906	3.50	2206	5.00
2	1907	5.00	2207	7.30
2 1/2	1908	7.30	2208	10.00
3	1909	10.00	2209	23.00
3 1/2	1910	23.00	2210	23.00
4	1911	23.00	....	.....

Tees

1/8	273	$.80	$1.60	243	$.80	$1.60	1399	$.80	$1.60
1/4	274	.80	1.60	244	.80	1.60	1400	.80	1.60
3/8	275	.80	1.60	245	.80	1.60	1401	.95	1.90
1/2	276	.95	1.90	246	.95	1.90	1402	1.10	2.20
3/4	277	1.10	2.20	247	1.10	2.20	1403	1.35	2.70
1	278	1.35	2.70	248	1.35	2.70	1404	1.75	3.50
1 1/4	279	1.75	3.50	249	1.75	3.50	1405	2.30	4.60
1 1/2	280	2.30	4.60	250	2.30	4.60	1406	2.90	5.80
2	281	2.90	5.80	251	2.90	5.80	1407	4.40	8.80
2 1/2	282	4.40	8.80	252	4.40	8.80	1408	7.50	15.00
3	283	7.50	15.00	253	7.50	15.00	1409	17.00	34.00
3 1/2	...	....	.....	254	17.00	34.00	1410	17.00	34.00
4	...	....	.....	255	17.00	34.00	....	.....	.....
6	...	....	.....	256	45.00	90.00	....	.....	.....

45° Laterals



1/2	4823	$2.00	4892	$2.00
3/4	4824	2.50	4893	2.50
1	4825	3.00	4894	3.00
1 1/4	4826	3.75	4895	3.75
1 1/2	4827	4.75	4896	4.75
2	4828	5.80	4897	5.80

45° Ells

Size Inches	3000-Pound No.	3000-Pound Plain Each	6000-Pound No.	6000-Pound Plain Each
1/8	2000	$.68	2024	$.68
1/4	2001	.68	2025	.68
3/8	2002	.68	2026	.78
1/2	2003	.78	2027	.90
3/4	2004	.90	2028	1.08
1	2005	1.08	2029	1.44
1 1/4	2006	1.44	2030	1.80
1 1/2	2007	1.80	2031	2.28
2	2008	2.28	2032	3.48
2 1/2	2009	3.48	2033	6.00
3	2010	6.00	2034	14.00
3 1/2	2011	14.00	2035	14.00
4	2012	14.00	....	.....

Street Ells

1/8	1800	$.75	1260	$.75
1/4	1801	.75	1261	.85
3/8	1802	.85	1262	.85
1/2	1803	.85	1263	1.05
3/4	1804	1.05	1264	1.40
1	1805	1.40	1265	2.00
1 1/4	1806	2.00	1266	2.50
1 1/2	1807	2.50	1267	3.15
2	1808	3.15	....	....

Vogt Drop Forged Screwed Fittings

3000 Pounds

Carbon Steel	Carbon Molybdenum Steel
3000 Pounds Cold Non-Shock	3600 Pounds Cold Non-Shock
1200 Pounds at 900°F.	1325 Pounds at 900°F.

6000 Pounds

Carbon Steel	Carbon Molybdenum Steel
6000 Pounds Cold Non-Shock	6600 Pounds Cold Non-Shock
2000 Pounds at 900°F.	2125 Pounds at 900°F.

Fittings are machined from solid steel. Order and refer to fittings by numbers.

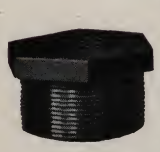
Hexagon Head Steel Plugs

No.	Each	Size Inches
2470	$.25	1/8
2471	.25	1/4
2472	.25	3/8
2473	.25	1/2
2474	.30	3/4
2340	.40	1
2341	.55	1 1/4
2342	.85	1 1/2
2343	1.65	2
2344	3.30	2 1/2
2345	5.50	3
2346	6.35	3 1/2
2347	7.15	4

Square Head Steel Plugs

2490	$.25	1/8
2491	.25	1/4
2492	.25	3/8
2493	.25	1/2
2494	.30	3/4
2475	.35	1
2476	.50	1 1/4
2477	.75	1 1/2
2478	1.50	2
2479	3.00	2 1/2
2480	5.00	3
2481	5.75	3 1/2
2482	6.50	4

Hexagon Steel Bushings



2400	$.45	1/4x 1/8
2400 1/2	.45	3/8x 1/4 & Less
2401	.45	1/2x 3/8 & Less
2402	.45	3/4x 1/2 & Less
2403	.50	1 x 3/4 & Less
2404	.66	1 1/4x1 & Less
2405	.83	1 1/2x1 1/4 & Less
2406	1.20	2 x 3/4 & Less
2407	1.32	2 x1 & More
2408	4.50	2 1/2x1 1/4 & Less
2409	5.00	2 1/2x1 1/2 & More
2410	7.25	3 x1 1/2 & Less
2411	8.00	3 x2 & More
2412	8.25	3 1/2x1 1/2 & Less
2413	9.00	3 1/2x2 & More
2414	9.50	4 x1 1/2 & Less
2415	10.50	4 x2 & More
2416	12.50	5 x4 & Less
2417	20.00	6 x5 & Less

Flush Steel Bushings

2370	$.50	1/4x 1/8
2371	.50	3/8x 1/4 & Less
2372	.50	1/2x 3/8 & Less
2373	.55	3/4x 1/2 & Less
2374	.60	1 x 3/4 & Less
2375	.75	1 1/4x1 & Less
2376	.95	1 1/2x1 1/4 & Less
2377	1.50	2 x1 1/2 & Less
2378	2.00	2 1/2x2 & Less
2379	5.00	3 x2 1/2 & Less
2380	6.00	3 1/2x3 & Less
2381	7.50	4 x3 1/2 & Less
2382	8.75	5 x4 & Less
2383	10.00	6 x5 & Less

Steel Couplings

For 3000-Pound Service

For 6000-Pound Service

For 3000-Pound Service

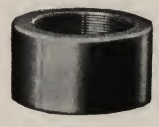
Straight			Reducing		
No.	Each	Size Inches	No.	Each	Size Inches
2324	$.40	1/8	2450	$.55	1/4x 1/8
2325	.40	1/4	2451	.55	3/8x 1/4 & Less
2326	.40	3/8	2452	.70	1/2x 3/8 & Less
2327	.40	1/2	2453	1.00	3/4x 1/2 & Less
2328	.45	3/4	2454	1.20	1 x 3/4 & Less
2329	.55	1	2455	1.35	1 1/4x1 & Less
2330	.70	1 1/4	2456	1.60	1 1/2x1 1/4 & Less
2331	.85	1 1/2	2457	1.85	2 x1 1/2 & Less
2332	1.15	2	2458	2.75	2 1/2x2 & Less
2333	1.60	2 1/2	2459	3.75	3 x2 1/2 & Less
2334	2.75	3	2460	5.50	3 1/2x3 & Less
2335	3.85	3 1/2	2461	6.75	4 x3 1/2 & Less
2336	4.80	4	....	....	.....

For 6000-Pound Service

2350	$.60	1/8	2670	$.75	1/4x 1/8
2351	.60	1/4	2671	.75	3/8x 1/4 & Less
2352	.60	3/8	2672	.90	1/2x 3/8 & Less
2353	.60	1/2	2673	1.25	3/4x 1/2 & Less
2354	.65	3/4	2674	1.50	1 x 3/4 & Less
2355	.85	1	2675	1.70	1 1/4x1 & Less
2356	1.05	1 1/4	2676	2.10	1 1/2x1 1/4 & Less
2357	1.30	1 1/2	2677	2.50	2 x1 1/2 & Less
2358	1.75	2	2678	3.60	2 1/2x2 & Less
2359	2.40	2 1/2	2679	5.75	3 x2 1/2 & Less
2360	4.75	3	2680	9.50	3 1/2x3 & Less
2361	8.50	3 1/2	2681	11.75	4 x3 1/2 & Less
2362	10.90	4	....	.....	.....

Steel Pipe Caps

For 3000-Pound Service

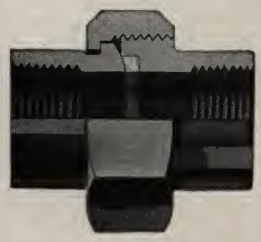


No.	Each	Size Inches	No.	Each	Size Inches
4200	$.35	1/8	4209	$3.65	2 1/2
4201	.35	1/4	4210	4.35	3
4202	.35	3/8	4211	5.45	3 1/2
4203	.45	1/2	4212	13.00	4
4204	.65	3/4	4213	18.00	5
4205	.90	1	4214	22.00	6
4206	1.00	1 1/4	4215	30.00	7
4207	1.30	1 1/2	4216	32.70	8
4208	2.00	2	....	.....	...

Vogt Forged Steel Screwed Unions

Inserted Stainless Steel Seat

Standard, for 2000 Pounds Cold Working Pressure
Extra Heavy, for 6000 Pounds Cold Working Pressure



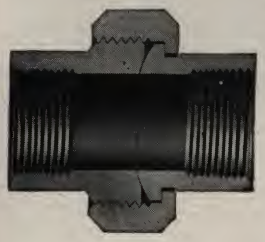
All parts of the union are forged steel. Seat for ground joint is cold rolled stainless steel.

Size Inches	Standard Each	Extra Heavy Each
1/8	$.40	....
1/4	.40	$.90
3/8	.50	1.20
1/2	.60	1.50
3/4	.70	1.80
1	.80	2.40
1 1/4	1.20	3.60
1 1/2	1.60	4.80
2	2.30	6.00
2 1/2	4.50	....
3	6.75	....

Vogt Forged Steel Screwed Unions

Integral Steel Seat

Standard, for 2000 Pounds Cold Working Pressure
Extra Heavy, for 6000 Pounds Cold Working Pressure



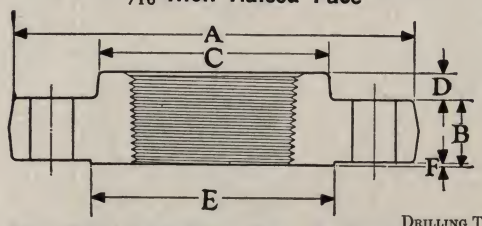
All parts of the union are forged steel. Seat for ground joint is steel.

Size Inches	Standard Each	Extra Heavy Each
1/8	$.40	....
1/4	.40	$.90
3/8	.50	1.20
1/2	.60	1.50
3/4	.70	1.80
1	.80	2.40
1 1/4	1.20	3.60
1 1/2	1.60	4.80
2	2.30	6.00
2 1/2	4.50	....
3	6.75	....

Vogt Drop Forged Steel Companion Flanges

300 Pound American Standard

1/16-Inch Raised Face



No.	Nom. Pipe Size In.	Faced Threaded and Drilled Each	Outside Diam. In. A	Thick. Flange In. B	Diam. Hub In. C	Hgt. Hub In. D	Diam. Raised Face E	Drilling Template No. Bolts	Drilling Template Diam. Bolts In.	Drilling Template Diam. Bolt Circle In.
7102	1/2	$8.00	3 3/4	9/16	1 1/2	5/16	1 3/8	4	1/2	2 5/8
7103	3/4	8.00	4 5/8	5/8	1 7/8	3/8	1 11/16	4	5/8	3 1/4
7104	1	8.00	4 7/8	11/16	2 1/8	3/8	2	4	5/8	3 1/2
7105	1 1/4	9.00	5 1/4	3/4	2 1/2	5/16	2 1/2	4	5/8	3 7/8
7106	1 1/2	10.00	6 1/8	13/16	2 3/4	3/8	2 7/8	4	3/4	4 1/2
7107	2	11.00	6 1/2	7/8	3 5/16	7/16	3 5/8	8	5/8	5
7108	2 1/2	13.00	7 1/2	1	3 15/16	1/2	4 1/8	8	3/4	5 7/8
7109	3	15.00	8 1/4	1 1/8	4 5/8	9/16	5	8	3/4	6 5/8
7110	3 1/2	19.00	9	1 3/16	5 1/4	9/16	5 1/2	8	3/4	7 1/4
7111	4	20.00	10	1 1/4	5 3/4	5/8	6 3/16	8	3/4	7 7/8
7112	5	24.00	11	1 3/8	7	5/8	7 5/16	8	3/4	9 1/4
7113	6	27.00	12 1/2	1 7/16	8 1/8	5/8	8 1/2	12	3/4	10 5/8
7114	8	35.00	15	1 5/8	10 1/4	13/16	10 5/8	12	7/8	13
7115	10	48.00	17 1/2	1 7/8	12 5/8	3/4	12 3/4	16	1	15 1/4
7116	12	60.00	20 1/2	2	14 3/4	7/8	15	16	1 1/8	17 3/4

Height of raised face, F, 1/16-inch.
Flanges are furnished faced, drilled and threaded unless otherwise specified.
Plain forgings (not machined), prices upon application.
Flanges faced and threaded only, prices upon application.
Reducing flanges, prices upon application.
Blind flanges, prices upon application.

Vogt Drop Forged Steel Flanged Ells

600 Pounds American Standard

600 Pounds Pressure at 750°F.
1000 Pounds Cold Non-Shock Pressure

Made from solid forgings; flanges are forged integral.

Flange facing must be specified on order.

The 1/4-inch raised face is regularly furnished but ring joint, tongue and groove, or male and female will be furnished without additional charge.

Prices of reducing ells will be given on application.

Prices for special fittings furnished upon application.

No.	Each	Size Inches	Center to Contact Surface Inches	Flange Diameter Inches	Approx. Weight Pounds
9733	$16.00	1/2	3 1/4	3 3/4	6 1/2
9734	17.00	3/4	3 3/4	4 5/8	10 1/2
9735	18.00	1	4 1/4	4 7/8	13
9736	20.00	1 1/4	4 1/2	5 1/4	17 1/2
9737	24.75	1 1/2	4 3/4	6 1/8	26
9738	27.00	2	5 3/4	6 1/2	33
9739	38.50	2 1/2	6 1/2	7 1/2	80
9740	51.25	3	7	8 1/4	104
9741	94.50	4	8 1/2	10 3/4	197
9742	*	6	11	14	450

*Price on application.

Vogt Drop Forged Steel Flanged Tees

600 Pounds American Standard

600 Pounds Pressure at 750°F.
1000 Pounds Cold Non-Shock Pressure

Made from solid forgings; flanges are forged integral.

Flange facing must be specified on order.

The 1/4-inch raised face is regularly furnished but ring joint, tongue and groove, or male and female will be furnished without additional charge.

Prices of reducing ells will be given on application.

Prices for special fittings furnished upon application.

No.	Each	Size Inches	Center to Contact Surface Inches	Flange Diameter Inches	Approx. Weight Pounds
9933	$17.00	1/2	3 1/4	3 3/4	11 1/2
9934	18.00	3/4	3 3/4	4 5/8	15 1/2
9935	20.00	1	4 1/4	4 7/8	18 1/2
9936	22.00	1 1/4	4 1/2	5 1/4	24 1/2
9937	27.50	1 1/2	4 3/4	6 1/8	36
9938	30.25	2	5 3/4	6 1/2	54
9939	43.25	2 1/2	6 1/2	7 1/2	100
9940	55.50	3	7	8 1/4	130
9941	100.00	4	8 1/2	10 3/4	245
9942	*	6	11	14	650

*Price on application.

Vogt Drop Forged Carbon Steel Flange Unions

Ground Joint—Screwed Type

Oval

Square

Round

Flange unions furnished unless otherwise specified. A flange union consists of one ball and one socket flange and the necessary bolts. Carbon steel machine bolts are regularly furnished. When ordering single flanges state whether ball or socket face is required.

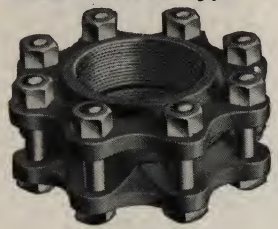
Blind or reducing flanges and high tensile alloy steel bolt-studs can be furnished, prices upon application.

No.	Single Flange Each	Oval Flange Union Each	Nominal Pipe Size Inches	Outside Size of Flange Inches
500 Pounds Cold Working Pressure				
		Oval		
2871	$.90	$2.00	1/4	3 3/4
2872	.90	2.00	3/8	3 3/4
2873	1.10	2.40	1/2	3 3/4
2874	1.30	3.20	3/4	4 3/4
2875	1.70	3.60	1	4 3/4
		Square		
2876	$2.20	$4.90	1 1/4	5
2877	2.70	5.90	1 1/2	5 5/8
2878	3.30	7.20	2	6 1/4
2879	4.60	10.00	2 1/2	7 1/4
2880	5.50	12.00	3	7 5/8
2881	7.40	16.00	3 1/2	8 3/8
1500 Pounds Cold Working Pressure				
		Oval		
1351	$.90	$2.00	1/4	3 3/4
1352	.90	2.00	3/8	3 3/4
1353	1.10	2.40	1/2	3 3/4
1354	1.30	3.20	3/4	4 3/4
1355	1.70	3.60	1	4 3/4
		Square		
1356	$2.20	$4.90	1 1/4	5 5/8
1357	2.70	5.90	1 1/2	5 5/8
1358	3.30	8.40	2	6 1/4
1359	4.60	11.20	2 1/2	7 1/4
		Round		
1360	$16.00	$36.00	3	9
1361	18.00	40.00	3 1/2	10
1362	22.00	52.00	4	11
2500 Pounds Cold Working Pressure				
		Oval		
2391	$.90	$2.00	1/4	3 3/4
2392	.90	2.00	3/8	3 3/4
2393	1.10	2.40	1/2	3 3/4
2394	1.30	3.20	3/4	4 3/4
2395	1.70	3.80	1	4 3/4
		Square		
2396	$2.20	$6.00	1 1/4	5 5/8
2397	2.70	7.00	1 1/2	5 5/8
2398	8.80	20.00	2	7 13/16
2399	15.00	34.00	2 1/2	8 13/16
4000 Pounds Cold Working Pressure				
		Oval		
2781	$3.40	$7.60	1/4	4 1/2
2782	3.40	7.60	3/8	4 1/2
2783	3.40	7.60	1/2	4 1/2
2784	4.00	9.20	3/4	5 15/16
2785	4.80	10.80	1	5 15/16
		Square		
2786	$6.20	$14.40	1 1/4	6 7/8
2787	7.00	16.00	1 1/2	6 7/8
2788	8.80	21.00	2	7 13/16
2789	15.00	42.00	2 1/2	8 13/16

Vogt Drop Forged Carbon Steel Flange Unions

Tongue and Groove Faces—Screwed Type

Oval—2 Bolts



Round—8 Bolts

Square—4 Bolts

Flange unions furnished unless otherwise specified. A flange union consists of one tongue and one groove flange, the necessary bolts and a gasket. Carbon steel machine bolts are regularly furnished. When ordering single flanges, state whether tongue or groove face is required.

Blind or reducing flanges and high tensile alloy steel bolt-studs can be furnished, prices upon application.

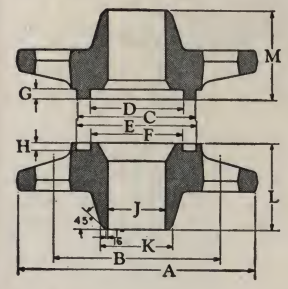
No.	Single Flange Each	Oval Flange Union Each	Nominal Pipe Size Inches	Outside Size of Flange Inches
500 Pounds Cold Working Pressure				
		Oval		
330	$.45	$1.00	1/4	3 3/4
331	.45	1.00	3/8	3 3/4
332	.55	1.20	1/2	3 3/4
333	.65	1.60	3/4	4 3/4
334	.85	1.80	1	4 3/4
		Square		
335-S	$1.10	$2.45	1 1/4	5
336	1.35	2.95	1 1/2	5 5/8
337	1.65	3.60	2	6 1/4
338	2.30	5.00	2 1/2	7 1/4
339	2.75	6.00	3	7 5/8
340	3.70	8.00	3 1/2	8 3/8
		Round		
341	$5.00	11.00	4	9 3/8
342	6.50	14.00	5	10 1/4
*343	9.25	20.00	6	11 1/2
1500 Pounds Cold Working Pressure				
		Oval		
2701	$.45	$1.00	1/4	3 3/4
2702	.45	1.00	3/8	3 3/4
2703	.55	1.20	1/2	3 3/4
2704	.65	1.60	3/4	4 3/4
2705	.85	1.80	1	4 3/4
		Square		
2706	$1.10	$2.45	1 1/4	5 5/8
2707	1.35	2.95	1 1/2	5 5/8
2708	1.65	4.20	2	6 1/4
2709	2.30	5.60	2 1/2	7 1/4
		Round		
2710	$8.00	$18.00	3	9
2711	9.00	20.00	3 1/2	10
2712	11.00	26.00	4	11
2500 Pounds Cold Working Pressure				
		Oval		
2721	$.45	$1.00	1/4	3 3/4
2722	.45	1.00	3/8	3 3/4
2723	.55	1.20	1/2	3 3/4
2724	.65	1.60	3/4	4 3/4
2725	.85	1.90	1	4 3/4
		Square		
2726	$1.10	$3.00	1 1/4	5 5/8
2727	1.35	3.50	1 1/2	5 5/8
2728	4.40	10.00	2	7 13/16
2729	7.50	17.00	2 1/2	8 13/16
4000 Pounds Cold Working Pressure				
		Oval		
2741	$1.70	$3.80	1/4	4 1/2
2742	1.70	3.80	3/8	4 1/2
2743	1.70	3.80	1/2	4 1/2
2744	2.00	4.60	3/4	5 15/16
2745	2.40	5.40	1	5 15/16
		Square		
2746	$3.10	$7.20	1 1/4	6 7/8
2747	3.50	8.00	1 1/2	6 7/8
2748	4.40	10.50	2	7 13/16
2749	7.50	21.00	2 1/2	8 13/16

*Furnished with 12 bolts.

Vogt Drop-Forged Steel Ammonia Welding Neck Flanges

Tongue and Groove Faces

500 Pounds Cold Working Pressure



A flange union consists of one tongue and one groove flange, the necessary bolts and a gasket. Shape of flange is square. Flange unions will be furnished on all orders unless otherwise specified.

Vogt welding flanges match Vogt standard screwed ammonia flanges.

Orders for single flanges should state whether tongue or groove face is desired.

No.	WN-335	WN-336	WN-337
Single Flange.....each	$2.60	$2.90	$3.30
Flange Union.....each	5.80	6.50	7.80
Nominal Pipe Size....inches	1¼	1½	2
A.....inches	5⅝	5⅝	6¼
B.....inches	4	4	4⅝
C.....inches	2 27/32	2 27/32	3 15/32
D.....inches	2 9/32	2 9/32	2 25/32
E.....inches	2 29/32	2 29/32	3 17/32
F.....inches	2 7/32	2 7/32	2 23/32
G.....inches	5/32	5/32	3/16
H.....inches	⅛	⅛	⅛
J.....inches	1.380	1.610	2.067
K.....inches	1.660	1.900	2.375
L.....inches	2 1/16	2 1/16	2 5/32
M.....inches	2 3/32	2 3/32	2 3/16
Number of Bolts.....	4	4	4
Diameter of Bolts....inches	⅝	⅝	⅝
Length of Bolts.....inches	2¾	2¾	3
Approximate Weight.pounds	10	10	11½

Vogt Malleable Iron Ammonia Return Bends

Screw Ends

300 Pounds Working Pressure

No.	Size In.	Centers In.	Wt. Lbs.	Price Each	No.	Size In.	Centers In.	Wt. Lbs.	Price Each
349	1	1¾	1½	$.75	358	1½	3	4¾	$1.50
350	1	2½	2¼	.95	359	1½	6	8	2.25
351	1	3	2½	1.10	360	1½	8	9¾	2.60
352	1¼	2¼	3½	1.15	361	2	3	5	1.60
353	1¼	2½	3¾	1.25	362	2	3½	7¼	1.70
354	1¼	3	4	1.30	363	2	4	8¼	2.00
355	1¼	3½	5½	1.50	364	2	6	10¾	2.50
356	1¼	4	4¾	1.55	365	2	8	13¼	2.70
357	1¼	6	5¼	2.00	...	...	.	....	....

Vogt Malleable Iron Union Return Bends for Ammonia

Screw Ends

For 300 Pounds Working Pressure

No.	Size Inches	Centers Inches	No. of Bolts	Weight Pounds	Price Each
371	1¼	4	4	9¼	$2.60
372	1¼	6	4	12½	2.80
373	2	3½	4	18	4.60
374	2	4	4	19	4.95
375	2	4⅝	4	19¾	5.20
376	2	6	4	22	6.25

Vogt Semi-Steel Flanged Ammonia Fittings

Tongue and Groove Ends

Elbows

With Oval Flanges

With Square Flanges

With Round Flanges

No.	Size Inches	Each	Shape of Flanges	No. of Bolts	Diam. Bolts Inches	Length Bolts Inches
291	¼	$2.45	Oval	2	½	2½
292	⅜	2.45	Oval	2	½	2½
293	½	2.70	Oval	2	½	2½
294	¾	3.35	Oval	2	⅝	3
295	1	4.25	Oval	2	⅝	3
296	1¼	5.40	Square	4	⅝	3¼
297	1½	6.15	Square	4	⅝	3¼
298	2	7.35	Square	4	⅝	3½
299	2½	11.40	Square	4	¾	3¾
300	3	14.00	Square	4	¾	3¾
301	3½	18.30	Square	4	¾	3¾
302	4	32.00	Round	8	¾	3½
303	5	41.50	Round	8	¾	3½
304	6	61.50	Round	12	¾	3¾
306	8	93.50	Round	12	⅞	4½
307	10	125.00	Round	16	1	5¼

Tees

With Oval Flanges

With Square Flanges

With Round Flanges

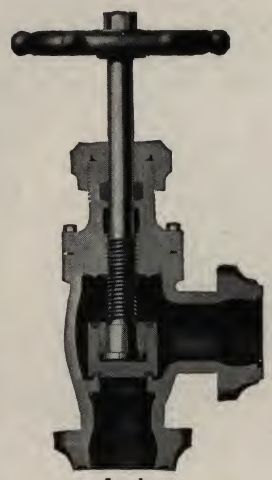
No.	Size Inches	Each	Shape of Flanges	No. of Bolts	Diam. Bolts Inches	Length Bolts Inches
310	¼	$3.90	Oval	2	½	2½
311	⅜	3.90	Oval	2	½	2½
312	½	4.20	Oval	2	½	2½
313	¾	5.05	Oval	2	⅝	3
314	1	5.95	Oval	2	⅝	3
315	1¼	7.40	Square	4	⅝	3¼
316	1½	9.70	Square	4	⅝	3¼
317	2	10.95	Square	4	⅝	3½
318	2½	17.85	Square	4	¾	3¾
319	3	21.35	Square	4	¾	3¾
320	3½	29.70	Square	4	¾	3¾
321	4	49.00	Round	8	¾	3½
322	5	61.00	Round	8	¾	3½
323	6	80.25	Round	12	¾	3¾
325	8	121.70	Round	12	⅞	4½
326	10	160.00	Round	16	1	5¼

The above prices include drop forged steel companion flanges with bolts and gaskets.

Vogt Semi-steel Flanged Ammonia Valves

Working Pressures to 300 Pounds

Globe



Angle

Check

Size Inches	No. of Bolts	Diam. Bolts Inches	Length Bolts Inches	Shape of Flanges	Globe No.	Globe Price Each
1/4	2	1/2	2 1/2	Oval	110	$7.40
3/8	2	1/2	2 1/2	Oval	111	7.90
1/2	2	1/2	2 1/2	Oval	112	8.40
3/4	2	5/8	3	Oval	113	9.75
1	2	5/8	3	Oval	114	11.15
1 1/4	4	5/8	3 1/4	Square	120	17.95
1 1/2	4	5/8	3 1/4	Square	121	19.45
2	4	5/8	3 1/2	Square	122	23.10
2 1/2	4	3/4	3 3/4	Square	123	34.00
3	4	3/4	3 3/4	Square	124	42.50
3 1/2	4	3/4	3 3/4	Square	125	53.60
4	8	3/4	3 1/2	Round	126	84.00
5	8	3/4	3 1/2	Round	127	118.20
6	12	3/4	3 3/4	Round	128	159.50
8	12	7/8	4 1/2	Round	129	355.00
10	16	1	5 1/4	Round	130	475.00

Size Inches	Angle No.	Angle Price Each	Check No.	Check Price Each	Expansion Globe No.	Expansion Globe Price Each
1/4	100	$7.40	168	$6.40	148	$9.40
3/8	101	7.90	169	6.90	149	9.90
1/2	102	8.40	170	7.40	150	10.40
3/4	103	9.75	171	8.25	151	11.75
1	104	11.15	172	9.65	152	13.15
1 1/4	134	17.95	178	15.95	153	19.95
1 1/2	135	19.45	179	17.45	...	.....
2	136	23.10	180	20.10	...	.....
2 1/2	137	34.00	181	30.50	...	.....
3	138	42.50	182	39.00	...	.....
3 1/2	139	53.60	183	49.60	...	.....
4	140	84.00	184	78.00	...	.....
5	141	118.20	185	111.00	...	.....
6	142	159.50	186	151.50	...	.....
8	143	355.00	187	340.00	...	.....
10	144	475.00	188	450.00	...	.....

The above prices include drop forged steel companion flanges with bolts and gaskets.

Vogt Drop Forged Steel Ammonia Globe and Angle Valves

Screw Bonnet—Inside Screw Stem—Inlaid Disc
Integral Beaded Seat
Screwed Ends
Working Pressures to 1200 Pounds with Cold Liquids

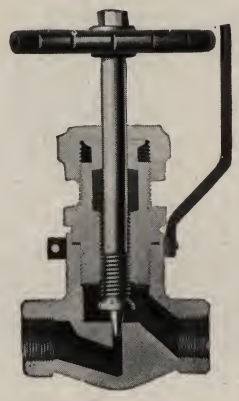
Globe

Angle

This type valve is recommended for ammonia service.

Seat is beaded type and is integral with body. Stem and disc are integral and made of steel. Disc has a composition metal inlay. A gasket joint is between body and bonnet. Stem is easily replaced. Valve can be repacked under pressure.

Size In.	Globe No.	Globe Each	Globe End to End, In.	Angle No.	Angle Each	Angle Ctr. to End, In.
1/4	1732	$7.50	3 1/8	1752	$7.50	1 9/16
3/8	1733	7.50	3 1/8	1753	7.50	1 9/16
1/2	1734	8.50	3 5/8	1754	8.50	1 7/8
3/4	1735	9.50	4 3/8	1755	9.50	2 3/16
1	1736	10.50	5	1756	10.50	2 1/2
1 1/4	1737	13.00	6	1757	13.00	3
1 1/2	1738	20.00	6 3/4	1758	15.00	3 3/8
2	1739	30.00	8 1/4	1759	25.00	4 1/8



Vogt Drop-Forged Steel Ammonia Expansion Valves

Screw Ends—Screw Bonnet—Inside Screw Stem—Integral Seat—Needle Point Stem—Steel Trimmings

Working Pressures to 1500 Pounds With Cold Liquids

Size In.	Globe No.	Globe Each	Angle No.	Angle Each
1/4	158	$9.50	2841	$9.50
3/8	159	9.50	2842	9.50
1/2	160	10.50	2843	10.50
3/4	161	11.50	2844	11.50
1	162	12.50	2845	12.50
1 1/4	163	15.00	2846	15.00

We are in position to furnish practically everything used in factory, mill or shop.

Cast Steel Flanged Fittings

150 and 300-Pound

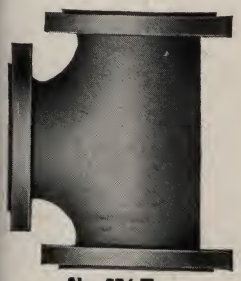
Lists on all fittings except return bends are the same for the 150 or 300-pound pressure. When ordering be sure to specify pressure wanted. Separate lists are given below for the return Bends.

Fittings are furnished with end flanges faced, drilled, and spot faced, unless otherwise ordered. Prices include drilling to the corresponding pressure class of the American Standard. No deduction is made if fittings are ordered faced only.

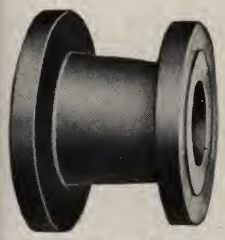
Regularly furnished with an American Standard 1/16-inch raised face on the end flanges.

No. 572 Elbow

No. 573 Base Elbow



No. 574 Tee



No. 576 Taper Reducer

90° Elbows

Size In.	Faced, Drilled & Spot Faced Each
1	$10.00
1¼	11.00
1½	12.00
2	13.00
2½	15.00
3	17.00
3½	20.00
4	22.00
5	27.00
6	33.00
8	48.00
10	67.00
12	84.00
14	108.00
16	140.00
18	180.00
20	225.00
24	355.00

90° Reducing Elbows

2 x 1½	$16.00
2½x 2	18.00
3 x 2	20.00
3 x 2½	20.00
3½x 3	24.00
4 x 2	26.00
4 x 2½	26.00
4 x 3	26.00
5 x 3	32.00
5 x 4	32.00
6 x 3	39.00
6 x 4	39.00
6 x 5	39.00
8 x 4	56.00
8 x 5	56.00
8 x 6	56.00
10 x 6	79.00
10 x 8	79.00
12 x 8	100.00
12 x10	100.00

45° Elbows

1	$10.00
1¼	11.00
1½	12.00
2	13.00
2½	15.00
3	17.00
3½	20.00
4	22.00
5	27.00
6	33.00
8	48.00
10	67.00
12	84.00
14	108.00
16	140.00
18	180.00
20	225.00
24	355.00

90° Base Elbows

Size In.	Faced, Drilled & Spot Faced Except Base Flge. Each	Facing, Drilling & Spot Facing Base Flge. Each
4	$32.00	$3.00
5	41.00	3.00
6	50.00	3.00
8	70.00	6.00
10	97.00	8.00
12	120.00	10.00
14	160.00	12.00
16	205.00	15.00
18	270.00	15.00
20	350.00	15.00
24	550.00	15.00

Base tees made to order.

90° Long Radius Elbows

Size In.	Faced, Drilled & Spot Faced Each
2	$17.00
2½	19.00
3	22.00
3½	26.00
4	29.00
5	39.00
6	48.00
8	70.00
10	92.00
12	115.00
14	157.00
16	205.00
18	270.00
20	350.00
24	545.00

Tees

1	$15.00
1¼	16.00
1½	17.00
2	18.00
2½	20.00
3	23.00
3½	26.00
4	29.00
5	37.00
6	46.00
8	65.00
10	90.00
12	110.00
14	147.00
16	190.00
18	245.00
20	320.00
24	490.00

Reducing Tees

Size In.	Faced, Drilled & Spot Faced Each
1¼	$18.00
1½	19.00
2	20.25
2½	22.50
3	26.00
3½	29.50
4	33.00
5	42.00
6	52.00
8	74.00
10	102.00
12	125.00
14	168.00
16	217.00
18	280.00
20	365.00
24	560.00

Crosses

1	$20.00
1¼	21.00
1½	23.00
2	25.00
2½	29.00
3	33.00
3½	38.00
4	42.00
5	51.00
6	63.00
8	91.00
10	127.00
12	160.00
14	205.00
16	265.00
18	340.00
20	430.00
24	675.00

Reducing Crosses

1¼	$23.50
1½	26.00
2	28.25
2½	33.00
3	37.00
3½	43.00
4	47.50
5	58.00
6	71.50
8	103.00
10	144.00
12	182.00
14	234.00
16	302.00
18	388.00
20	490.00
24	770.00

Taper Reducers

Size In.	Faced, Drilled & Spot Faced Each
2 x1½	$13.00
2½x 2	15.00
3 x 2	17.00
3 x 2½	17.00
3½x 3	20.00
4 x 2	22.00
4 x 2½	22.00
4 x 3	22.00
5 x 3	27.00
5 x 4	27.00
6 x 3	33.00
6 x 4	33.00
6 x 5	33.00
8 x 4	48.00
8 x 5	48.00
8 x 6	48.00
10 x 6	67.00
10 x 8	67.00
12 x 8	84.00
12 x10	84.00

Eccentric Reducers

Prices upon application.

Return Bends

150-Pound

Size In.	Ctr. to Ctr. In.	Faced, Drilled & Spot Faced Each
2	7	$18.25
3	7½	23.00
3	8	23.75
3	9	24.50
4	9	31.00
4	10	32.50
4	11	33.75
4	12	35.00
4	13	36.25
4	14	37.50
4	18	44.00
6	12	51.50
6	15	57.50

300-Pound

2	7½	$18.75
3	8½	24.00
3	12	26.50
4	10	32.50
4	11	33.75
4	11½	34.50
4	12	35.00
4	16½	41.75
4	17	42.50
4	17½	43.25
4	18	44.00
6	14	56.00
6	15	57.50
6	16½	61.00
6	17	62.00
6	18	64.00
8	17½	90.00

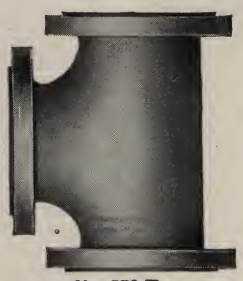
600-Pound Cast Steel Flanged Fittings

Fittings are furnished with end flanges faced, drilled, and spot faced, unless otherwise ordered. Prices include drilling to the corresponding pressure class of the American Standard. No deduction is made if fittings are ordered faced only.

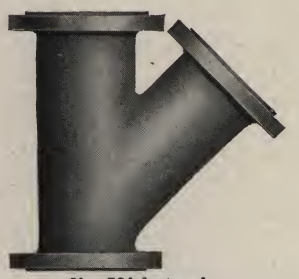
Regularly furnished with a ¼-inch male face (large male).

No. 577 Elbow

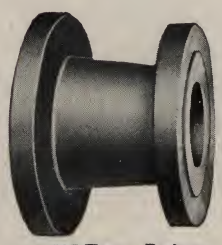
No. 578 Base Elbow



No. 579 Tee



No. 581 Lateral



No. 585 Taper Reducer

90° Elbows

Size In.	Faced, Drilled & Spot Faced Each
½	$12.00
¾	13.00
1	14.50
1¼	15.50
1½	17.00
2	19.00
2½	22.00
3	25.00
3½	29.00
4	34.00
5	47.75
6	61.00
8	89.00
10	140.00
12	182.00
14	231.00
16	325.00
18	406.00
20	518.00
24	791.00

90° Reducing Elbows

2 x 2½	$23.00
2½ x 2	26.00
3 x 2	30.00
3 x 2½	30.00
4 x 2	41.00
4 x 2½	41.00
4 x 3	41.00
5 x 3	57.00
5 x 4	57.00
6 x 3	73.00
6 x 4	73.00
6 x 5	73.00
8 x 4	107.00
8 x 5	107.00
8 x 6	107.00
10 x 6	168.00
10 x 8	168.00
12 x 8	218.00
12 x10	218.00

45° Elbows

½	$12.00
¾	13.00
1	14.50
1¼	15.50
1½	17.00
2	19.00
2½	22.00
3	25.00
3½	29.00
4	34.00
5	47.75
6	61.00
8	89.00
10	140.00
12	182.00

Continued

45° Elbows
Continued

Size In.	Faced, Drilled & Spot Faced Each
14	$231.00
16	325.00
18	406.00
20	518.00
24	791.00

90° Base Elbows

Size In.	Faced, Drilled & Spot Faced Except Base Flge. Each	Facing, Drilling & Spot Facing Base Flge. Each
4	$50.00	$4.80
5	72.75	4.80
6	93.00	4.80
8	132.00	9.50
10	197.00	13.00
12	254.00	16.00
14	316.00	19.00
16	445.00	24.00
18, 20, 24	Prices upon Application	

Base tees made to order.

Tees

Size In.	Faced, Drilled & Spot Faced Each
½	$17.50
¾	19.00
1	21.50
1¼	23.00
1½	25.00
2	28.00
2½	32.50
3	37.00
3½	43.00
4	51.00
5	72.25
6	91.00
8	135.50
10	209.00
12	276.00
14	346.00
16	485.00
18	572.00
20	729.00
24	1113.00

Reducing Tees

¾	$21.50
1	24.50
1¼	26.00
1½	28.50
2	31.50
2½	36.50
3	41.75
3½	48.50

Continued

Reducing Valves
Continued

Size In.	Faced, Drilled & Spot Faced Each
4	$58.00
5	82.25
6	104.00
8	154.50
10	238.00
12	315.00
14	395.00
16	554.00
18	652.00
20	831.00
24	1271.00

Crosses

½	$24.50
¾	26.50
1	30.00
1¼	31.50
1½	34.50
2	39.00
2½	45.00
3	51.00
3½	60.00
4	71.00
5	100.50
6	126.00
8	188.00
10	292.00
12	385.00
14	482.00
16	675.00
18	798.00
20	1019.00
24	1554.00

Reducing Crosses

¾	$30.00
1	34.00
1¼	35.50
1½	39.00
2	44.00
2½	51.00
3	58.00
3½	68.00
4	80.50
5	114.50
6	143.00
8	214.00
10	333.00
12	439.00
14	550.00
16	771.00
18	910.00
20	1162.00
24	1775.00

45° Laterals

½	$24.50
¾	26.50
1	30.00
1¼	31.50
1½	34.50

Continued

45° Laterals
Continued

Size In.	Faced, Drilled & Spot Faced Each
2	$39.00
2½	45.00
3	51.00
3½	60.00
4	71.00
5	100.50
6	126.00
8	188.00
10	292.00
12	385.00
14	482.00
16	675.00
18	798.00
20	1019.00
24	1554.00

45° Reducing Laterals

¾	$30.00
1	34.00
1¼	35.50
1½	39.00
2	44.00
2½	51.00
3	58.00
3½	68.00
4	80.50
5	114.50
6	143.00
8	214.00
10	333.00
12	439.00
14	550.00
16	771.00
18	910.00
20	1162.00
24	1775.00

Taper Reducers

2 x 1½	$19.00
2½ x 2	22.00
3 x 2	25.00
3 x 2½	25.00
4 x 2	34.00
4 x 2½	34.00
4 x 3	34.00
5 x 3	47.75
5 x 4	47.75
6 x 3	61.00
6 x 4	61.00
6 x 5	61.00
8 x 4	89.00
8 x 5	89.00
8 x 6	89.00
10 x 6	140.00
10 x 8	140.00
12 x 8	182.00
12 x10	182.00

Eccentric Reducers

Prices upon application.

900 and 1500-Pound Cast Steel Flanged Fittings

Fittings are furnished with end flanges faced, drilled, and spot faced, unless otherwise ordered. Prices include drilling to the corresponding pressure class of the American Standard. No deduction is made if fittings are ordered faced only.

Regularly furnished with a ¼ inch male face (large male).

900-Pound Fittings

90° Elbows

Size In.	Faced, Drilled & Spot Faced Each
3	$35.75
3½	44.25
4	54.00
5	77.50
6	100.00
8	177.00
10	263.00
12	360.00
14	450.00
16	585.00
18	730.00
20	932.00
24	1423.00

90° Reducing Elbows

4x2	$65.00
4x2½	65.00
4x3	65.00
5x3	93.00
5x4	93.00
6x3	120.00
6x4	120.00
6x5	120.00
8x4	213.00
8x5	213.00
8x6	213.00
10x6	316.00
10x8	316.00
12x8	432.00
12x10	432.00

45° Elbows

Size In.	Faced, Drilled & Spot Faced Each
3	$35.75
3½	44.25
4	54.00
5	77.50
6	100.00
8	177.00
10	263.00
12	360.00
14	450.00
16	585.00
18	730.00
20	932.00
24	1423.00

90° Base Elbows

Size In.	Faced, Drilled & Spot Faced Except Base Flge. Each	Facing, Drilling & Spot Facing Base Flge. Each
4	$81.00	$6.00
5	116.50	6.00
6	150.00	6.00
8	262.00	12.00
10	373.00	16.00
12	505.00	20.00
14	620.00	24.00
16	800.00	30.00
18, 20, 24	Prices upon Application	

Base tees made to order.

Tees

Size In.	Faced, Drilled & Spot Faced Each
3	$56.50
3½	70.50
4	84.50
5	122.00
6	155.00
8	276.00
10	415.00
12	565.00
14	705.00
16	918.00
18	1029.00
20	1312.00
24	2000.00

Reducing Tees

3	$64.00
3½	80.00
4	96.00
5	139.00
6	176.00
8	314.00
10	472.00
12	643.00
14	802.00
16	1043.00
18	1173.00
20	1495.00
24	2287.00

Crosses

Size In.	Faced, Drilled & Spot Faced Each
3	$78.50
3½	97.50
4	117.00
5	168.00
6	215.00
8	381.00
10	574.00
12	785.00
14	975.00
16	1270.00
18	1436.00
20	1834.00
24	2797.00

Reducing Crosses

3	$89.00
3½	111.00
4	133.00
5	191.00
6	244.00
8	434.00
10	654.00
12	894.00
14	1110.00
16	1445.00
18	1638.00
20	2091.00
24	3195.00

45° Laterals

Size In.	Faced, Drilled & Spot Faced Each
3	$78.50
3½	97.50
4	117.00
5	168.00
6	215.00
8	381.00
10	574.00
12	785.00
14	975.00
16	1270.00
18	1436.00
20	1834.00
24	2797.00

45° Reducing Laterals

3	$89.00
3½	111.00
4	133.00
5	191.00
6	244.00
8	434.00
10	654.00
12	894.00

Continued

45° Reducing Laterals Continued

Size In.	Faced, Drilled & Spot Faced Each
14	$1110.00
16	1445.00
18	1638.00
20	2091.00
24	3195.00

Taper Reducers

4x 2	$54.00
4x 2½	54.00
4x 3	54.00
5x 3	77.50
5x 4	77.50
6x 3	100.00
6x 4	100.00
6x 5	100.00
8x 4	177.00
8x 5	177.00
8x 6	177.00
10x 6	263.00
10x 8	263.00
12x 8	360.00
12x10	360.00

Eccentric Reducers

Prices upon application.

1500-Pound Fittings

90° Elbows

Size In.	Faced, Drilled & Spot Faced Each
½	$14.00
¾	15.00
1	16.50
1¼	18.00
1½	20.25
2	24.00
2½	29.25
3	44.75
3½	55.25
4	67.50
5	97.00
6	125.00
8	221.00
10	329.00
12	450.00
14	565.00

90° Reducing Elbows

2x1½	$29.00
2½x2	35.00
3 x2	54.00
3 x2½	54.00
4 x2	81.00
4 x2½	81.00
4 x3	81.00
5 x3	117.00
5 x4	117.00
6 x3	150.00
6 x4	150.00
6 x5	150.00
8 x4	265.00
8 x5	265.00
8 x6	265.00

45° Elbows

Size In.	Faced, Drilled & Spot Faced Each
½	$14.00
¾	15.00
1	16.50
1¼	18.00
1½	20.25
2	24.00
2½	29.25
3	44.75
3½	55.25
4	67.50
5	97.00
6	125.00
8	221.00
10	329.00
12	450.00
14	565.00

90° Base Elbows

Size In.	Faced, Drilled & Spot Faced Except Base Flge. Each	Facing, Drilling & Spot Facing Base Flge. Each
4	$101.00	$7.50
5	145.00	7.50
6	188.00	7.50
8	328.00	15.00
10	467.00	20.00
12	631.00	25.00
14	780.00	30.00

Base tees made to order.

Tees

Size In.	Faced, Drilled & Spot Faced Each
½	$20.50
¾	22.50
1	25.25
1¼	27.75
1½	31.00
2	37.00
2½	46.00
3	71.00
3½	88.00
4	105.50
5	154.00
6	194.00
8	345.00
10	519.00
12	707.00
14	890.00

Reducing Tees

¾	$25.50
1	29.00
1¼	31.50
1½	35.00
2	42.00
2½	52.00
3	81.00
3½	100.00
4	120.00
5	175.00
6	220.00
8	395.00
10	590.00
12	805.00
14	1010.00

Crosses

Size In.	Faced, Drilled & Spot Faced Each
½	$27.50
¾	29.50
1	33.50
1¼	38.50
1½	43.00
2	51.00
2½	63.50
3	98.00
3½	122.00
4	146.00
5	210.00
6	269.00
8	476.00
10	717.00
12	981.00
14	1230.00

Reducing Crosses

¾	$33.50
1	38.00
1¼	44.00
1½	49.00
2	58.00
2½	72.00
3	110.00
3½	140.00
4	165.00
5	240.00
6	305.00
8	540.00
10	820.00
12	1120.00
14	1400.00

45° Laterals

Size In.	Faced, Drilled & Spot Faced Each
½	$27.50
¾	29.50
1	33.50
1¼	38.50
1½	43.00
2	51.00
2½	63.50
3	98.00
3½	122.00
4	146.00
5	210.00
6	269.00
8	476.00
10	717.00
12	981.00
14	1230.00

45° Reducing Laterals

¾	$33.50
1	38.00
1¼	44.00
1½	49.00
2	58.00
2½	72.00
3	110.00
3½	140.00

Continued

45° Reducing Laterals Continued

Size In.	Faced, Drilled & Spot Faced Each
4	$165.00
5	240.00
6	305.00
8	540.00
10	820.00
12	1120.00
14	1400.00

Taper Reducers

2 x1½	$24.00
2½x2	29.25
3 x2	44.75
3 x2½	44.75
4 x2	67.50
4 x2½	67.50
4 x3	67.50
5 x3	97.00
5 x4	97.00
6 x3	125.00
6 x4	125.00
6 x5	125.00
8 x4	221.00
8 x5	221.00
8 x6	221.00

Eccentric Reducers

Prices upon application.

Stainless Steel Screwed Fittings

Iron Pipe Size—For 125 Pounds S.W.P.—18-8 (C .07-.10)

90° Elbow

45° Elbow

For reducing elbows, tees, crosses, and couplings, add 15% to price of largest standard size.

Special fittings: laterals, hose couplings, flange unions, union elbows, union tees, etc., prices upon application.

Extras for special analysis on request.

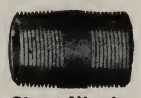
Tee

Cross

Size.....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
Elbows, 90°.....each	$1.15	$1.15	$1.30	$1.50	$1.75	$2.25	$3.00	$3.75	$5.50	$11.00	$14.00	$18.60
Elbows, 45°.....each	1.40	1.40	1.60	1.85	2.25	2.65	3.50	4.50	6.50	13.00	16.50	21.00
Elbows, Street.....each	1.45	1.50	1.65	1.90	2.35	2.95	3.90	4.75	6.95	13.50	17.25	22.50
Tees.....each	1.60	1.60	1.80	2.10	2.50	3.25	4.25	5.25	7.75	15.40	19.60	26.00
Crosses.....each	2.30	2.30	2.60	3.00	3.50	4.50	6.00	7.50	11.00	22.00	28.00	39.20
Caps.....each	1.05	1.05	1.20	1.40	1.60	2.00	2.60	3.25	4.50	8.00	10.30	14.70
Couplings.....each	1.15	1.15	1.30	1.50	1.70	2.15	2.80	3.50	5.00	8.30	11.50	16.00
Plugs.....each	.70	.70	.80	.95	1.10	1.40	1.80	2.25	3.10	4.80	7.30	11.30
Bushings.....each	....	.90	.95	1.05	1.20	1.50	1.95	2.45	3.40	7.70	9.40	14.40
Unions.....each	4.00	4.00	4.00	4.00	5.25	7.00	9.75	12.75	17.00	22.95	31.85	46.40
Locknuts.....each	.80	.80	.95	1.05	1.20	1.55	2.00	2.25	2.95	5.00	7.70	10.70
Return Bends.....each	....	....	....	2.75	3.55	4.70	7.00	7.85	12.75	20.10	29.50	39.50

Stainless Steel Nipples

Iron Pipe Size—For 125 Pounds S.W.P.—18-8 (C .07-.10)


Short Nipple

Tank nipples, prices on application. Lengths not listed: under 10 inches, use next highest price; over 10 inches, prices upon request. Nipples threaded one end only and hose nipples, prices upon application.

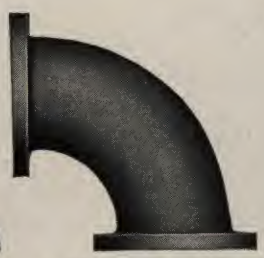
Long Nipple

Pipe Size In.	Length, In. Close	Length, In. Short	Close Each	Short Each	Long, Each Length, Inches 2	3	4	5	6	7	8	9	10
1/8	3/4	1 1/2	$.66	$.78	$.84	$1.02	$1.20	$1.38	$1.56	$1.74	$1.92	$2.10	$2.28
1/4	7/8	1 1/2	.78	.84	.90	1.08	1.26	1.44	1.62	1.80	1.98	2.16	2.34
3/8	1	1 1/2	.84	.90	.96	1.20	1.44	1.68	1.92	2.16	2.40	2.64	2.88
1/2	1 1/8	1 1/2	.90	.96	1.02	1.26	1.50	1.74	1.98	2.22	2.46	2.70	2.94
3/4	1 3/8	2	.96	1.20	....	1.50	1.80	2.10	2.40	2.70	3.00	3.30	3.60
1	1 1/2	2	1.20	1.38	....	1.80	2.22	2.64	3.06	3.48	3.90	4.32	4.74
1 1/4	1 5/8	2 1/2	1.62	2.04	....	2.28	2.82	3.36	3.90	4.44	4.98	5.52	6.06
1 1/2	1 3/4	2 1/2	2.04	2.40	....	2.70	3.30	3.90	4.50	5.10	5.70	6.30	6.90
2	2	2 1/2	2.52	2.88	....	3.24	3.96	4.68	5.40	6.12	6.72	7.44	8.16
2 1/2	2 1/2	3	5.88	6.48	....	....	7.62	8.76	9.90	11.10	12.24	13.38	14.53
3	2 5/8	3	7.14	7.62	....	....	9.00	10.32	11.64	13.02	14.34	15.60	17.04
4	2 7/8	4	11.00	13.40	....	....	....	15.80	18.20	20.60	23.00	25.40	27.80

Stainless Steel Flanged Fittings

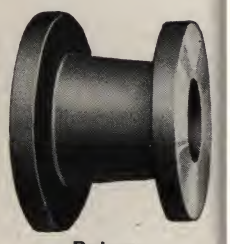
18-8 (C .07-.10)—Faced and Drilled

90° Elbow


90° Long Radius Elbow

Tee

Lateral


Reducer

Size.....inches	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10
Elbow, 90°.....each	$9.00	$9.60	$12.55	$16.00	$20.15	$25.20	$35.85	$46.80	$57.60	$86.65	$126.00
Reducer.....each	9.00	9.60	12.55	16.00	20.15	25.20	35.85	46.80	57.60	86.65	126.00
Elbow, 45°.....each	8.65	9.45	12.15	15.35	19.45	24.25	35.20	45.45	55.45	82.65	118.00
Long Radius Elbow.....each	11.20	14.00	15.00	20.00	24.60	31.00	49.60	57.20	76.40	115.20	176.80
Tee.....each	13.40	14.40	18.80	24.00	30.20	37.80	53.80	70.20	86.40	130.00	188.00
Cross.....each	18.00	19.20	25.05	32.00	40.25	50.40	71.73	93.60	115.20	173.35	252.00
Lateral.....each	15.75	16.80	21.95	28.00	35.35	44.00	62.65	81.80	100.80	151.67	220.40

Reducing elbows, tees, laterals, and crosses same as standard fitting of largest opening.

Extra heavy flanged fittings, prices on application.

Companion Flange

Stainless Steel Flanges

For 150 Pounds S.W.P.—18-8 (C. 07-.10)

Blind Flange

Size.....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6
*Companion Flanges....each	....	....	....	$5.00	$6.00	$7.00	$8.00	$9.00	$11.00	$13.00	$16.00	$25.00	$30.00	$37.50
†Blind Flanges.....each	....	....	....	6.25	7.50	8.75	10.00	11.25	13.75	16.25	20.00	31.25	37.50	47.00
‡Expanded Flanges.....each	....	....	....	7.85	8.10	9.35	10.75	11.95	14.50	17.20	21.25	32.20	38.50	48.25
Welding Spuds.....each	$2.10	$2.25	$2.45	2.60	2.85	3.40	3.65	3.95	4.85	5.50	6.95	9.75	11.25	14.20

*Templates, faced and drilled. †Faced and drilled. ‡Bored, faced and drilled.

Reducing flanges same as standard flanges of the largest size.

Extra heavy flanges, prices on application.

Watson-Stillman Welding Fittings

Drop Forged—Socket Ends

90° Elbow

Tee

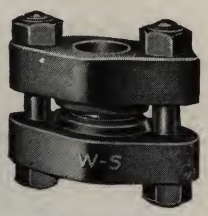
45° Elbow

Cross

Cap

Coupling

Reducer



Flanged Union

For Use with Schedule 40—Standard Pipe

2000 Pounds Cold Non-Shock Working Pressure—Air, Oil, Water or Gas
700 Pounds Non-Shock Working Pressure at 900°F.—Steam, Hot Oil or Vapor

Carbon Steel

Size In.	No. 470 90° Elbows Each	No. 570 Tees Each	No. 670 45° Elbows Each	No. 870 Crosses Each	No. 1070 Cplgs. Each	No. 1170 Reducers Each	No. 1370 Caps Each	No. 1870 Flgd. Unions Each
1/4	$.55	$.80	$.68	$1.10	$.40	....	$.35	....
3/8	.55	.80	.68	1.10	.40	$.55	.35	$3.40
1/2	.65	.95	.78	1.30	.40	.70	.45	3.40
3/4	.75	1.10	.90	1.50	.45	1.00	.65	3.80
1	.90	1.35	1.08	1.90	.55	1.20	.90	4.25
1 1/4	1.20	1.75	1.44	2.80	.70	1.35	1.00	5.25
1 1/2	1.50	2.30	1.80	3.50	.85	1.60	1.30	6.50
2	1.90	2.90	2.28	5.00	1.15	1.85	2.00	8.75

Carbon-Molybdenum Steel

Size In.	No. 470M 90° Elbows Each	No. 570M Tees Each	No. 670M 45° Elbows Each	No. 870M Crosses Each	No. 1070M Cplgs. Each	No. 1170M Reducers Each	No. 1370M Caps Each
1/4	$.95	$1.10	$1.00	$1.50	$.75	....	$.65
3/8	1.10	1.25	1.15	1.70	.80	$1.40	.70
1/2	1.25	1.50	1.35	2.05	.85	1.60	.95
3/4	1.70	2.15	1.90	2.95	.90	1.85	1.30
1	2.45	3.25	2.75	4.60	1.10	2.15	1.80
1 1/4	4.00	5.00	4.50	8.00	1.50	2.50	2.15
1 1/2	5.75	7.00	6.25	10.65	1.90	3.75	2.90
2	7.25	8.80	7.90	15.25	2.60	4.25	4.50

For Use with Schedule 80—Extra Heavy Pipe

3000 Pounds Cold Non-Shock Working Pressure—Air, Oil, Water or Gas
1000 Pounds Non-Shock Working Pressure at 900°F.—Steam, Hot Oil or Vapor

Carbon Steel

Size In.	No. 480 90° Elbows Each	No. 580 Tees Each	No. 680 45° Elbows Each	No. 880 Crosses Each	No. 1080 Cplgs. Each	No. 1180 Reducers Each	No. 1380 Caps Each	No. 1880 Flgd. Unions Each
1/4	$.55	$.80	$.68	$1.10	$.40	....	$.35	....
3/8	.55	.80	.68	1.10	.40	$.55	.35	$3.40
1/2	.65	.95	.78	1.30	.40	.70	.45	3.40
3/4	.75	1.10	.90	1.50	.45	1.00	.65	3.80
1	.90	1.35	1.08	1.90	.55	1.20	.90	4.25
1 1/4	1.20	1.75	1.44	2.80	.70	1.35	1.00	5.25
1 1/2	1.50	2.30	1.80	3.50	.85	1.60	1.30	6.50
2	1.90	2.90	2.28	5.00	1.15	1.85	2.00	8.75

Carbon-Molybdenum Steel

Size In.	No. 480M 90° Elbows Each	No. 580M Tees Each	No. 680M 45° Elbows Each	No. 880M Crosses Each	No. 1080M Cplgs. Each	No. 1180M Reducers Each	No. 1380M Caps Each
1/4	$.95	$1.10	$1.00	$1.50	$.75	....	$.65
3/8	1.10	1.25	1.15	1.70	.80	$1.40	.70
1/2	1.25	1.50	1.35	2.05	.85	1.60	.95
3/4	1.70	2.15	1.90	2.95	.90	1.85	1.30
1	2.45	3.25	2.75	4.60	1.10	2.15	1.80
1 1/4	4.00	5.00	4.50	8.00	1.50	2.50	2.15
1 1/2	5.75	7.00	6.25	10.65	1.90	3.75	2.90
2	7.25	8.80	7.90	15.25	2.60	4.25	4.50

For Use with Schedule 160—Seamless Tubing

4000 Pounds Cold Non-Shock Working Pressure—Air, Oil, Water or Gas
1400 Pounds Non-Shock Working Pressure at 900°F.—Steam, Hot Oil or Vapor

Carbon Steel

Size In.	No. 490 90° Elbows Each	No. 590 Tees Each	No. 690 45° Elbows Each	No. 890 Crosses Each	No. 1090 Cplgs. Each	No. 1190 Reducers Each	No. 1390 Caps Each	No. 1890 Flgd. Unions Each
1/2	$.75	$1.10	$.90	$1.50	$.60	$.90	$.65	$3.80
3/4	.90	1.35	1.08	1.90	.65	1.25	.90	4.25
1	1.20	1.75	1.44	2.80	.85	1.50	1.00	5.25
1 1/4	1.50	2.30	1.80	3.50	1.05	1.70	1.30	6.50
1 1/2	1.90	2.90	2.28	5.00	1.30	2.10	2.00	8.75
2	2.90	4.40	3.48	7.30	1.75	2.50	3.65	13.75

Carbon-Molybdenum Steel

Size In.	No. 490M 90° Elbows Each	No. 590M Tees Each	No. 690M 45° Elbows Each	No. 890M Crosses Each	No. 1090M Cplgs. Each	No. 1190M Reducers Each	No. 1390M Caps Each
1/2	$1.70	$2.15	$1.90	$2.95	$.90	$1.85	$1.30
3/4	2.45	3.25	2.75	4.60	1.10	2.15	1.80
1	4.00	5.00	4.50	8.00	1.50	2.50	2.15
1 1/4	5.75	7.00	6.25	10.65	1.90	3.75	2.90
1 1/2	7.25	8.80	7.90	15.25	2.60	4.25	4.50
2	9.00	10.20	9.65	19.50	3.80	5.80	8.00

For Use with Double Extra Heavy Pipe

6000 Pounds Cold Non-Shock Working Pressure—Air, Oil, Water or Gas
2100 Pounds Non-Shock Working Pressure at 900°F.—Steam, Hot Oil or Vapor

Carbon Steel

Size In.	No. 500 90° Elbows Each	No. 600 Tees Each	No. 700 45° Elbows Each	No. 900 Crosses Each	No. 1100 Cplgs. Each	No. 1200 Reducers Each	No. 1400 Caps Each	No. 1900 Flgd. Unions Each
3/8	$.65	$.95	$.78	$1.30	$.60	$.75	$.45	$3.40
1/2	.75	1.10	.90	1.50	.60	.90	.65	3.80
3/4	.90	1.35	1.08	1.90	.65	1.25	.90	4.25
1	1.20	1.75	1.44	2.80	.85	1.50	1.00	5.25
1 1/4	1.50	2.30	1.80	3.50	1.05	1.70	1.30	6.50
1 1/2	1.90	2.90	2.28	5.00	1.30	2.10	2.00	8.75
2	2.90	4.40	3.48	7.30	1.75	2.50	3.65	13.75

Carbon-Molybdenum Steel

Size In.	No. 500M 90° Elbows Each	No. 600M Tees Each	No. 700M 45° Elbows Each	No. 800M Crosses Each	No. 1100M Cplgs. Each	No. 1200M Reducers Each	No. 1400M Caps Each
3/8	$1.25	$1.50	$1.35	$2.05	$.85	$1.60	$.95
1/2	1.70	2.15	1.90	2.95	.90	1.85	1.30
3/4	2.45	3.25	2.75	4.60	1.10	2.15	1.80
1	4.00	5.00	4.50	8.00	1.50	2.50	2.15
1 1/4	5.75	7.00	6.25	10.65	1.90	3.75	2.90
1 1/2	7.25	8.80	7.90	15.25	2.60	4.25	4.50
2	9.00	10.20	9.65	19.50	3.80	5.80	8.00

Larger sizes and other types of socket welding fittings can be made to order.

Prices of reducers are for one size reduction only. For reducers having reduction of two or more sizes, prices upon request.

Sleeve type couplings can be furnished at the same prices as those applying to socket end couplings; unless otherwise specified socket end couplings will be furnished.

Reducing fittings are bored from straight blanks. Prices for reducing fittings, upon request.

Socket welding fittings of Type 347 forged stainless steel, can be made to order; prices upon request.

Bonny WeldOlets and ThredOlets

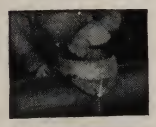
Welded Outlets for Piping

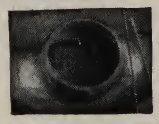
WeldOlets and ThredOlets are standard, stock welding fittings of drop forged steel, designed for making any type or combination of right angle branch pipe outlets.

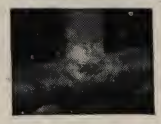
Made in three types: WeldOlets, which have outlets beveled at 45° and to which the branch pipe is welded after beveling the end at the same angle; ThredOlets, which have outlets tapped to standard taper pipe sizes; and Socket-End WeldOlets, which have outlets bored to standard, outside pipe diameters.

Easily Installed

WeldOlets, ThreadOlets and Socket-End WeldOlets are easily installed. Simply select the position of the outlet, rub the fitting over the pipe several times to remove scale, mark center lines and tack the fitting into place.







The electric arc or oxy-acetylene method of welding is then used to complete the job. A junction of full pipe strength and a leakproof joint is the result.

Where the outlet is 2 inches or larger, the button should be removed after the welding operation. On small sizes, the fitting is used as a templet and the hole is cut in the main pipe first, either with a hole saw, the torch or by drilling. After removing the button, inspection of the inside of the joint is possible, allowing the removal of scale, welding metal, etc.

The branch line is then welded into position. If ThredOlet is used, branch pipe is threaded and screwed into place. Results in a leakproof junction of full pipe strength.

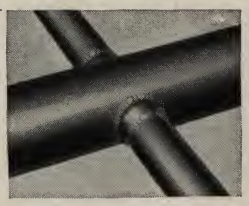
Advantages

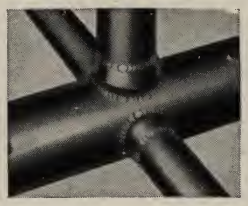
Tees, crosses, side outlets, side outlets and crosses and double crosses can all be made with WeldOlets, ThredOlets and/or Socket-End WeldOlets.

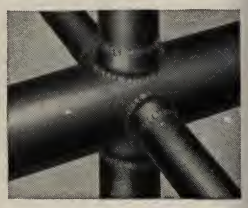
Every branch pipe outlet made with a WeldOlet, ThredOlet or Socket-End WeldOlet will provide a leakproof junction of full pipe strength, that, because of its funnel-shaped intake aperture, reduces friction and turbulence to a minimum.

No templets required for cutting hole in main pipe; no complicated forming or fitting is necessary. Position of outlet selected and WeldOlet, ThredOlet or Socket-End WeldOlet is welded into place.

Adaptable to every type of piping system and for all commonly used pressures and temperatures. In addition to drop forged steel, fittings can also be supplied on special order in wrought iron, Toncan iron, brass, Monel, Everdur and other metals to meet every piping need.







Size-to-Size WeldOlets

Pipe Size ... inches	‡½x½	¾x¾	1x1	1¼x1¼	1½x1½	2x2	2½x2½	3x3	3½x3½	4x4	†5x5	†6x6	†8x8	†10x10	†12x12
Each	$.75	.80	.90	1.10	1.35	1.65	2.20	2.70	4.00	8.00	16.00	30.00	45.00	85.00	110.00
*Height ... inches	⅞	1	1⅛	1¼	1½	1⅝	2	2	2	2⅛	2¼	2⅜	2½	3	3⅜
O.D ... inches	1½	1⅞	2⅜	2½	3¼	3⅞	4⅝	5⅛	6	7	8⅛	10	12¼	14⅞
Approx. Wt ... lb.	5/16	⅜	⅝	13/16	1¼	2½	3½	4¾	6	9½	10¼	20	31½	54

Size-to-Size ThredOlets

Pipe Size ... inches	‡½x½	¾x¾	1x1	1¼x1¼	1½x1½	2x2	2½x2½	3x3	3½x3½	4x4	†5x5	†6x6
Each	$1.50	1.50	1.75	2.00	2.50	3.00	4.50	6.00	9.00	18.00	37.50	70.00
*Height ... inches	.....	⅞	1	1⅛	1¼	1¼	1¾	2	2	2⅛	2⅜	2½
O.D ... inches	.....	1½	1⅞	2⅜	2½	3¼	3⅞	4⅝	5⅛	6	7	8½
Approx. Wt ... pounds	.....	⅜	7/16	7/16	13/16	1¼	2½	4	5	6¾	11¼	17½

Reducing Size WeldOlets

Outlet Size ... inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10
Each	$.50	.50	.50	.55	.65	.80	1.00	1.25	1.60	2.00	2.75	4.25	8.00	16.00	25.00	45.00
*Height ... inches	⅝	⅝	¾	⅞	1	1⅛	1¼	1½	1⅝	1¾	1⅞	2	2¼	2⅜	2¾	3
O.D ... inches	1 11/32	1 11/32	1⅜	1¾	2⅛	2⅝	2⅞	3½	4⅛	4¾	5½	6	7¼	8⅜	10⅜	12⅝
Intake Size ... inches	29/32	29/32	29/32	15/32	17/16	1¾	2	29/16	3	3 11/16	4⅜	4¾	6⅛	7¼	8 11/16	10 13/16
Approx. Wt ... pounds	3/16	3/16	5/16	5/16	7/16	9/16	15/16	1⅛	1¾	2¾	4½	5	5⅝	8¼	20	33

Reducing Size ThredOlets and Socket-End WeldOlets

Outlet Size ... inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10
ThredOlets ... each	$.75	$.75	$.75	$.85	1.00	$1.25	$1.50	$2.00	$3.00	$4.00	$5.00	$10.00	$20.00	$40.00	$80.00	$120.00
Socket-End WeldOlets ea.	1.01	1.01	1.01	1.15	1.35	1.69	1.88	2.70	4.05	5.40	7.50	13.50	27.00	54.00	108.00	162.00
*Height ... inches	⅞	⅞	⅞	⅞	1⅛	1¼	1¼	1½	1¾	2	2⅛	2¼	2⅝	2⅝	2¾	3
O.D ... inches	1 13/32	1 13/32	1 13/32	1¾	2⅛	2⅝	2⅞	3½	4⅛	4¾	5½	6	7¼	8⅞	10⅜	12⅝
Intake Size ... inches	29/32	29/32	29/32	15/32	17/16	1¾	2	29/16	3	3 11/16	4⅜	4¾	6⅛	7¼	8 11/16	10 13/16
Approx. Wt ... pounds	3/16	3/16	¼	¼	½	¾	1	1⅜	2	3	4½	5½	9¼	15	26	35

Main Pipe Size, Inches																
¾	¾x¼	¾x⅜	¾x½	....	....	....	....	....	....	....	....	....	....	....	....	....
1	1 x¼	1 x⅜	1 x½	1 x¾	....	....	....	....	....	....	....	....	....	....	....	....
1¼	1¼x¼	1¼x⅜	1¼x½	1¼x¾	1¼x1	....	....	....	....	....	....	....	....	....	....	....
1½	1½x¼	1½x⅜	1½x½	1½x¾	1½x1	1½x1¼	....	....	....	....	....	....	....	....	....	....
2	2 x¼	2 x⅜	2 x½	2 x¾	2 x1	2 x1¼	2 x1½	....	....	....	....	....	....	....	....	....
2½	2½x¼	2½x⅜	2½x½	2½x¾	2½x1	2½x1¼	2½x1½	2½x2	....	....	....	....	....	....	....	....
3	3 x¼	3 x⅜	3 x½	3 x¾	3 x1	3 x1¼	3 x1½	3 x2	3 x2½	....	....	....	....	....	....	....
3½	3½x¼	3½x⅜	3½x½	3½x¾	3½x1	3½x1¼	3½x1½	3½x2	3½x2½	3½x3	....	....	....	....	....	....
4	4 x¼	4 x⅜	4 x½	4 x¾	4 x1	4 x1¼	4 x1½	4 x2	4 x2½	4 x3	4 x3½	....	....	....	....	....
5	5 x¼	5 x⅜	5 x½	5 x¾	5 x1	5 x1¼	5 x1½	5 x2	5 x2½	5 x3	5 x3½	5x4	....	....	....	....
6	6 x¼	6 x⅜	6 x½	6 x¾	6 x1	6 x1¼	6 x1½	6 x2	6 x2½	6 x3	6 x3½	6x4	6x5	....	....	....
8	8 x¼	8 x⅜	8 x½	8 x¾	8 x1	8 x1¼	8 x1½	8 x2	8 x2½	8 x3	8 x3½	8x4	8x5	†8x6	....	....
10	10x¼	10x⅜	10x½	10x¾	10x1	10x1¼	10x1½	10x2	10x2½	10x3	10x3½	10x4	10x5	†10x6	†10x8	....
12	12x¼	12x⅜	12x½	12x¾	12x1	12x1¼	12x1½	12x2	12x2½	12x3	12x3½	12x4	12x5	†12x6	†12x8	†12x10

*Indicates height from top of the curve of the main pipe to the extreme top of the fittings.

†Made of cast steel, heat treated.

‡Made from 1x1½-inch fittings.

Six Outstanding Advantages of TUBE-TURN welding fittings

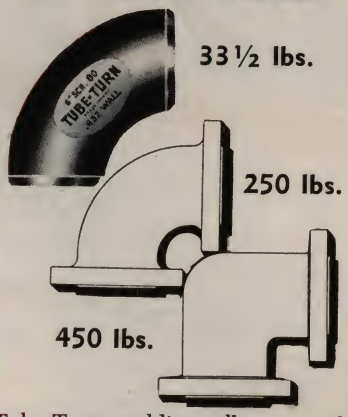
1. SPEED INSTALLATION

Tube-Turn fittings simplify lining-up operations; require only easy circumferential butt-welds—which insure faster, better, safer welding by both veteran and novice operators. Piping sections can be preassembled, then welded into position.

2. SAVE SPACE

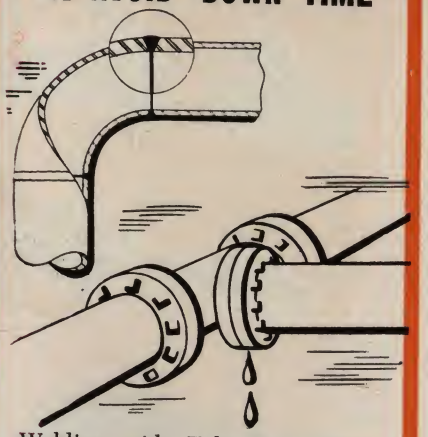
Tube-Turn fittings occupy less space, permit streamlined, compact layouts and sharp angles—neater, more efficient piping. Elbows can be cut to any odd angle. Saving space important in most industries, is vital in shipbuilding.

3. REDUCE WEIGHT



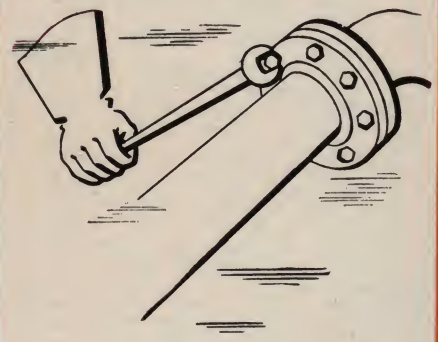
Tube-Turn welding elbow weighs only 33½ lbs. Forged flanged elbow weighs 450 lbs. Cast steel flanged elbow, 250 lbs. All three fittings are 6″ size. Multiply this weight reduction by the number of connections in an entire piping system and the saving is tremendous!

4. AVOID "DOWN TIME"



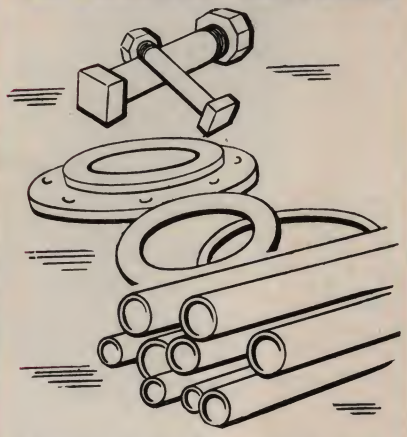
Welding with Tube-Turn fittings insures permanently leak-proof, trouble-free joints and better fittings that last as long as the pipe itself. Tube-Turn fittings banish the piping troubles which seriously interrupt the crucial piping arteries that keep war plants going.

5. REDUCE MAINTENANCE



Welding with Tube-Turn fittings eliminates the many maintenance headaches inherent with mechanically connected piping, such as leaks, gasket changes, bolt tightening, caulking, threading, and difficult covering. Replacement worries are minimized, too.

6. CONSERVE MATERIALS



Absence of any flanges, bolts, nuts and heavy cast steel construction saves many tons of metal in a single piping system. Never necessary to replace pipe because of worn threads or damage due to replacing flanged fittings. No gaskets required, either.

Awarded Army-Navy "E", Maritime Commission "M" burgee, Victory Fleet and Treasury Dept. flags for outstanding effort in war production.

Piping systems welded with Tube-Turn fittings are *stronger, safer, lighter, tighter, easier to install, require practically no maintenance.* They speed erection, save space, and simplify structural problems. Remember these timely points when you buy or specify fittings for oil, gas, power, chemical, heating, air, refrigeration and marine piping!

For helpful engineering data, technical facts and complete information on all Tube-Turn welding fittings, consult complete Tube Turn Catalog and Data Book No. 111. Sent free on request.

TUBE-TURN
TRADE MARK
Welding Fittings

90° SHORT RADIUS ELBOW

90° LONG RADIUS ELBOW

45° LONG RADIUS ELBOW

STRAIGHT TEE

REDUCING OUTLET TEE

CONCENTRIC REDUCER

ECCENTRIC REDUCER

TUBE-TURN WELDING FITTINGS—RANGE OF SIZES

Type of Fitting	Description	Standard Weight	Extra Strong	Schedule 160	Double Extra Strong	Light Gauge: Nominal Pipe Size	Light Gauge: Iron Pipe Size
Elbows	90° Long Radius	1/2"-24"	3/4"-24"	1"-14"	1"-8"	4"-24"	3"-12"
Elbows	90° Short Radius	1"-30"	1 1/2"-30"				
Elbows	45° Long Radius	1/2"-30"*	3/4"-30"*	1"-14"	1"-8"	4"-24"	3"-12"
Elbows	180° Long Radius	1/2"-24"	1"-24"	1"-14"	3"-8"	4"-24"	3"-12"
Returns	180° Short Radius	1"-30"	1 1/2"-30"				
Returns	180° Extra Long Radius	1"-2 1/2"	1"-2 1/2"				
Returns	Straight	1/2"-24"	1/2"-24"	1"-12"	1"-8"		
Tees	Reducing Outlet	3/4x3/8-24x20	3/4x3/8-24x20	3/4x3/8-12x10	1x3/8-8x6		
Tees	Concentric & Eccentric	1x3/8-24x20	1x3/8-24x20		1x3/8-8x6		
Reducers		3/4"-24"	3/4"-24"		1"-8"		
Caps		3/4"-24"	3/4"-24"				
Stub Ends	Lap Joint	1 1/4"-12"	1 1/4"-12"				
Nipples	Shaped, 90° to Header	1 1/4"-12"	1 1/4"-12"				
Nipples	Shaped, 45° to Header	2"-24"					
Saddles		1 1/4"-24"	1 1/4"-24"				
Laterals	Straight	1 1/4"-24"	1 1/4"-24"				
Laterals	Reducing	3/4"-24"	3/4"-24"				
Crosses	Straight	3/4"-12"	3/4"-12"				
Rings	Welding	2"-24"					
Sleeves	Welding						

*30" size short radius.

SUPER Tube-Turn 45° long radius elbows, 90° long radius elbows, and 180° long radius returns available in both Standard weight and Extra Strong in sizes from 3" to 12".

Tube-Turn welding fittings and flanges conform to applicable ASA and ASTM Standards. For further details please refer to Tube Turns catalog and data book No. 111.

TUBE-TURN FORGED STEEL FLANGES—RANGE OF SIZES

	150 Lb.	300 Lb.	400 Lb.	600 Lb.	900 Lb.	1500 Lb.	2500 Lb.
Welding Neck	1/2"-24"	1/2"-24"	1/2"-24"†	1/2"-24"	1/2"-24"*	1/2"-24"	1/2"-24"
Slip-On	1/2"-24"	1/2"-24"	1/2"-24"†	1/2"-24"	1/2"-24"*	1/2"-24"	1/2"-24"
Lap Joint	1/2"-24"	1/2"-24"	1/2"-24"†	1/2"-24"	1/2"-24"*	1/2"-24"	1/2"-24"
Threaded	1/2"-24"	1/2"-24"	1/2"-24"†	1/2"-24"	1/2"-24"*	1/2"-24"	1/2"-24"
Blind	1/2"-24"	1/4"- 4"		1/4"-3 1/2"			
Socket Type	1/4"-24"	3/4"-24"	3/4"-24"	3/4"-24"	3/4"-24"	3/4"-12"	3/4"-12"
Reducing-threaded or slip-on	3/4"-24"	1"-24"	4"-12"	4"-12"	3"-12"	1"-12"	
Orifice—threaded		1"-24"					
Orifice—slip-on		1"-24"	4"-12"	1"-12"	3"-12"	1"-12"	
Orifice—welding neck		1"-24"	1"-10"	1"-10"	1"-10"	1"-10"	
Long Welding Neck	1"-24"	1"-24"					

†Dimensions on sizes thru 3 1/2" same as for 600 lb. flanges.
*Dimensions on sizes thru 2 1/2" same as for 1500 lb. flanges.

WELDING RING

BLIND FLANGE

WELDING NECK FLANGE

TUBE-TURN

TRADE MARK

Welding Fittings and Flanges

The FIRST WELDING FITTINGS 1ST AND STILL THE BEST

TUBE TURNS (Inc.) Louisville, Ky. *Branch offices*: New York, Chicago, Philadelphia, Pittsburgh, Cleveland, Dayton, Washington, D. C., Houston, Los Angeles. *Distributors in principal cities.*

180 LONG RADIUS RETURN

LAP JOINT STUB END

CAP

STRAIGHT LATERAL

45° SHAPED NIPPLE

90° SHAPED NIPPLE

SADDLE

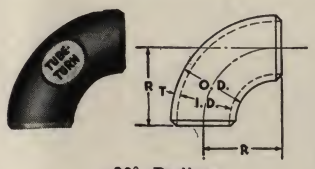
STRAIGHT CROSS

LAPPED FLANGE

SLIP-ON FLANGE

SCREWED FLANGE

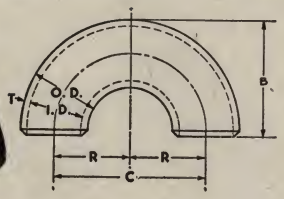
Seamless Steel Tube-Turns



90°, Radius

45°, Radius

180°, Radius



*Long Radius—Standard Pipe Thickness

Nom. Pipe Size In.	Outside Diameter Inches	Inside Diameter Inches	T Wall Thickness In.	90°, Part No. 1 Each	R Ctr. to Face Inches	Weight Pounds	45°, Part No. 5 Each	A Ctr. to Face Inches	R Radius Inches	Weight Pounds	180°, Part No. 7 Each	C Ctr. to Ctr. Inches	B Back to Face Inches	Weight Pounds
½	.840	.622	.109	$1.00	1½	⅛	$.90	⅝	1½	1/16	$2.20	3	1⅞	¼
¾	1.050	.824	.113	1.00	1⅛	⅙	.90	7/16	1⅛	1/16	2.20	2¼	1 11/16	⅓
1	1.315	1.049	.133	1.20	1½	⅜	1.08	⅞	1½	¼	2.65	3	2 3/16	¾
1¼	1.660	1.380	.140	1.40	1⅞	½	1.26	1	1⅞	⅓	3.10	3¾	2¾	1
1½	1.900	1.610	.145	1.70	2¼	¾	1.53	1⅛	2¼	⅜	3.75	4½	3¼	1½
2	2.375	2.067	.154	2.10	3	1½	1.90	1⅜	3	¾	4.65	6	4 3/16	3
2½	2.875	2.469	.203	3.40	3¾	3	3.05	1¾	3¾	1½	7.50	7½	5 3/16	6
3	3.500	3.068	.216	4.90	4½	4½	4.40	2	4½	2¼	10.80	9	6¼	9
3½	4.000	3.548	.226	6.35	5¼	6¼	5.70	2¼	5¼	3⅛	14.00	10½	7¼	12½
4	4.500	4.026	.237	7.65	6	8½	6.90	2½	6	4¼	17.00	12	8¼	17
5	5.563	5.047	.258	10.85	7½	14¼	9.80	3⅛	7½	7¼	23.90	15	10 5/16	28½
6	6.625	6.065	.280	15.80	9	23	14.25	3¾	9	11½	34.80	18	12 5/16	46
8	8.625	7.981	.322	30.00	12	45	27.00	5	12	22½	66.00	24	16 5/16	90
10	10.750	10.020	.365	53.40	15	78	48.00	6¼	15	39	117.50	30	20⅜	156
12	12.750	12.000	.375	80.70	18	118	72.75	7½	18	59	177.50	36	24⅜	236
14 O.D.	14.000	13.250	.375	120.00	21	147	108.00	8 11/16	21	74	264.00	42	28	294
16 O.D.	16.000	15.250	.375	175.00	24	202	158.00	9 15/16	24	101	385.00	48	32	404
18 O.D.	18.000	17.250	.375	235.00	27	256	212.00	11 3/16	27	128	517.00	54	36	512
20 O.D.	20.000	19.250	.375	270.00	30	310	245.00	12 7/16	30	155	594.00	60	40	617
24 O.D.	24.000	23.250	.375	340.00	36	446	315.00	14 15/16	36	223	748.00	72	48	892

*Long Radius—Extra Strong Pipe Thickness

				90°, Part No. 2			45°, Part No. 6				180°, Part No. 8			
¾	1.050	.742	.154	$1.50	1⅛	⅓	$1.35	7/16	1⅛	3/16	.....	...	...	....
1	1.315	.957	.179	1.50	1½	½	1.35	⅞	1½	¼	$3.30	3	2 3/16	1
1¼	1.660	1.278	.191	1.75	1⅞	¾	1.60	1	1⅞	⅜	3.85	3¾	2¾	1½
1½	1.900	1.500	.200	2.15	2¼	1	1.95	1⅛	2¼	½	4.75	4½	3¼	2
2	2.375	1.939	.218	2.65	3	2	2.40	1⅜	3	1	5.85	6	4 3/16	4
2½	2.875	2.323	.276	4.25	3¾	3¼	3.80	1¾	3¾	1⅝	9.35	7½	5 3/16	7½
3	3.500	2.900	.300	6.15	4½	6	5.55	2	4½	3	13.55	9	6¼	12
3½	4.000	3.364	.318	7.95	5¼	8½	7.15	2¼	5¼	4¼	17.60	10½	7¼	17
4	4.500	3.826	.337	9.55	6	11¾	8.60	2½	6	5⅞	21.00	12	8¼	23½
5	5.563	4.813	.375	13.55	7½	20	12.20	3⅛	7½	10	29.70	15	10 5/16	40
6	6.625	5.761	.432	19.75	9	33½	17.80	3¾	9	16¾	43.50	18	12 5/16	67
8	8.625	7.625	.500	37.50	12	69	33.75	5	12	34	82.50	24	16 5/16	138
10	10.750	9.750	.500	67.00	15	107½	60.50	6¼	15	53	147.40	30	20⅜	215
12	12.750	11.750	.500	101.00	18	150	91.00	7½	18	74	222.20	36	24⅜	300
14 O.D.	14.000	13.000	.500	150.00	21	188	135.00	8 11/16	21	95	330.00	42	28	376
16 O.D.	16.000	15.000	.500	219.00	24	262	197.00	9 15/16	24	131	482.00	48	32	524
18 O.D.	18.000	17.000	.500	294.00	27	338	265.00	11 3/16	27	170	647.00	54	36	676
20 O.D.	20.000	19.000	.500	340.00	30	409	310.00	12 7/16	30	205	748.00	60	40	824
24 O.D.	24.000	23.000	.500	410.00	36	591	370.00	14 15/16	36	295	902.00	72	48	1183

†Short Radius

	Standard Pipe Thickness										Extra Strong Pipe Thickness									
				90°, Part No. 3			180°, Part No. 9							90°, Part No. 4			180°, Part No. 10			
Nom. Pipe Size In.	Outside Diameter Inches	Inside Diameter Inches	T Wall Thickness Inches	Each	R Ctr. to Face Inches	Weight Pounds	Each	C Ctr. to Ctr. Inches	B Back to Face Inches	Weight Pounds	Outside Diameter Inches	Inside Diameter Inches	T Wall Thickness Inches	Each	R Ctr. to Face Inches	Weight Pounds	Each	C Ctr. to Ctr. In.	B Back to Face In.	Weight Pounds
1	1.315	1.049	.133	$1.20	1	¼	$2.40	2	1⅝	½	.....	.....	....	.....	...	...	.....	..	....	...
1¼	1.660	1.380	.140	1.40	1¼	⅜	2.80	2½	2 1/16	¾	.....	.....	....	.....	...	...	.....	..	....	...
1½	1.900	1.610	.145	1.70	1½	½	3.40	3	2 7/16	1	1.900	1.500	.200	$2.15	1½	¾	$4.30	3	2 7/16	1½
2	2.375	2.067	.154	2.10	2	⅞	4.20	4	3 3/16	1¾	2.375	1.939	.218	2.65	2	1½	5.30	4	3 3/16	3
2½	2.875	2.469	.203	3.40	2½	1¾	6.85	5	3 15/16	3½	2.875	2.323	.276	4.25	2½	2¼	8.40	5	3 15/16	4½
3	3.500	3.068	.216	4.90	3	3	9.80	6	4¾	6	3.500	2.900	.300	6.15	3	3¾	12.30	6	4¾	7½
3½	4.000	3.548	.226	6.35	3½	4	12.70	7	5½	8	4.000	3.364	.318	7.95	3½	5½	15.90	7	5½	11
4	4.500	4.026	.237	7.65	4	6	15.30	8	6¼	12	4.500	3.826	.337	9.55	4	7¾	19.00	8	6¼	15½
5	5.563	5.047	.258	10.85	5	9½	21.70	10	7¾	19	5.563	4.813	.375	13.55	5	13½	27.00	10	7¾	27
6	6.625	6.065	.280	15.80	6	15½	31.60	12	9 5/16	31	6.625	5.761	.432	19.75	6	22½	39.50	12	9 5/16	45
8	8.625	7.981	.322	30.00	8	31	60.00	16	12 5/16	62	8.625	7.625	.500	37.50	8	46	75.00	16	12 5/16	92
10	10.750	10.020	.365	53.40	10	55	106.80	20	15⅜	110	10.750	9.750	.500	67.00	10	71	134.00	20	15⅜	142
12	12.750	12.000	.375	80.70	12	78	161.40	24	18⅜	156	12.750	11.750	.500	101.00	12	100	202.00	24	18⅜	200
14 O.D.	14.000	13.250	.375	120.00	14	104	240.00	28	21	208	14.000	13.000	.500	150.00	14	132	300.00	28	21	264
16 O.D.	16.000	15.250	.375	175.00	15	118	350.00	30	23	236	16.000	15.000	.500	219.00	15	160	438.00	30	23	320
18 O.D.	18.000	17.250	.375	235.00	16½	148	470.00	33	25½	304	18.000	17.000	.500	294.00	16½	194	588.00	33	25½	388
20 O.D.	20.000	19.250	.375	270.00	20½	210	540.00	41	30½	420	20.000	19.000	.500	340.00	20½	280	680.00	41	30½	560
24 O.D.	24.000	23.250	.375	340.00	22	288	680.00	44	34	576	24.000	23.000	.500	410.00	22	370	820.00	44	34	740
30	30.000	29.250	.375	565.00	30	465	1130.00	60	45	931	30.000	29.000	.500	665.00	30	618	1330.00	60	45	1236

*The center line radius of Long Radius Tube-Turns is full one and one-half times the nominal pipe size.

†The center line radius of Standard Radius Tube-Turns is one times the nominal pipe size.

Order by the part number. When ordering 60 pieces size 6-inch Extra Strong Weight Seamless Steel 90° Tube-Turns, Standard Radius, order 60 size 6-inch—Part 4.

Tube-Turn Seamless Steel Welding Tees

Welding tees are made from wrought steel seamless pipe to standard, extra strong, and O.D. pipe sizes. Standard weight and extra strong weight tees conform to standard and extra strong weight pipe respectively in diameter and wall thickness.

Order by part number and size.

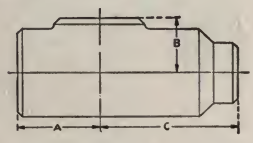
Nom. Pipe Size In.	Straight: Standard Part No. 20 Each	Straight: Extra Strong Part No. 21 Each	Red. Outlet: Standard Part No. 22 Each	Red. Outlet: Extra Strong Part No. 23 Each	Wall Thickness Inches: Standard	Wall Thickness Inches: Extra Strong
¾	$2.15	$2.15	$2.70	$2.70	.113	.154
1	2.15	2.15	2.70	2.70	.133	.179
1¼	2.90	2.90	3.60	3.60	.140	.191
1½	3.65	3.65	4.55	4.55	.145	.200
2	5.00	5.00	6.25	6.25	.154	.218
2½	7.30	7.30	9.10	9.10	.203	.276
3	9.50	12.00	11.85	15.00	.216	.300
3½	12.50	16.00	15.60	20.00	.226	.318
4	13.00	17.00	16.25	21.25	.237	.337
5	24.00	30.00	30.00	37.50	.258	.375
6	28.00	35.00	35.00	43.75	.280	.432
8	45.00	58.00	56.25	72.50	.322	.500
10	76.00	97.00	95.00	120.00	.365	.500
12	110.00	135.00	137.50	168.00	.375	.500
14 O.D.	165.00	205.00	165.00	205.00	.375	.500
16 O.D.	200.00	255.00	200.00	255.00	.375	.500
18 O.D.	245.00	320.00	245.00	320.00	.375	.500
20 O.D.	295.00	355.00	295.00	355.00	.375	.500
24 O.D.	380.00	490.00	380.00	490.00	.375	.500

Tees Dimensions

Nom. Pipe Size In.	Outlet Size In.	C.L. to End Run In.	C.L. to End Branch In.
¾	⅜	1⅛	1⅛
	½	1⅛	1⅛
	¾	1⅛	1⅛
1	⅜	1½	1½
	½	1½	1½
	¾	1½	1½
	1	1½	1½
1¼	½	1⅞	1⅞
	¾	1⅞	1⅞
	1	1⅞	1⅞
	1¼	1⅞	1⅞
1½	½	2¼	2¼
	¾	2¼	2¼
	1	2¼	2¼
	1¼	2¼	2¼
	1½	2¼	2¼
2	¾	2½	1¾
	1	2½	2
	1¼	2½	2¼
	1½	2½	2⅜
	2	2½	2½
2½	1	3	2¼
	1¼	3	2½
	1½	3	2⅝
	2	3	2¾
	2½	3	3
3	1	3⅜	2⅝
	1¼	3⅜	2¾
	1½	3⅜	2⅞
	2	3⅜	3
	2½	3⅜	3¼
	3	3⅜	3⅜
3½	1½	3¾	3⅛
	2	3¾	3¼
	2½	3¾	3½
	3	3¾	3⅝
	3½	3¾	3¾
4	1½	4⅛	3⅜
	2	4⅛	3½
	2½	4⅛	3¾
	3	4⅛	3⅞
	3½	4⅛	4
	4	4⅛	4⅛
5	2	4⅞	4⅛
	2½	4⅞	4¼
	3	4⅞	4⅜
	3½	4⅞	4½
	4	4⅞	4⅝
	5	4⅞	4⅞
6	2½	5⅝	4¾
	3	5⅝	4⅞
	3½	5⅝	5
	4	5⅝	5⅛
	5	5⅝	5⅜
	6	5⅝	5⅝
8	3	7	6
	3½	7	6
	4	7	6⅛
	5	7	6⅜
	6	7	6⅝
	8	7	7
10	4	8½	7¼
	5	8½	7½
	6	8½	7⅝
	8	8½	8
	10	8½	8½
12	5	10	8½
	6	10	8⅝
	8	10	9
	10	10	9½
	12	10	10
14 O.D.	6	7	8¼
	8	9	8¼
	10	10	8¼
	12	10½	8¼
	14	12½	8¼
16 O.D.	6	7	9¼
	8	9	9¼
	10	10	9¼
	12	10½	9¼
	14	12½	9¼
	16	14½	9¼
18 O.D.	8	9	10¼
	10	10	10¼
	12	10½	10¼
	14	12½	10¼
	16	14½	10¼
	18	16½	10¼
20 O.D.	8	9	11⅜
	10	10	11⅜
	12	10½	11⅜
	14	12½	11⅜
	16	14½	11⅜
	18	16½	11⅜
	20	18½	11⅜
24 O.D.	10	10	13½
	12	10½	13½
	14	12½	13½
	16	14½	13½
	18	16½	13½
	20	18½	13½
	24	22½	13½

Tube-Turn Welding Tees

Reducing on Run



Certain size reductions are too great to be accomplished in a single piece. The following sizes may be made by welding a reducing section to the reduced end of a tee: 24 to 14 inches; 20 to 12 inches; 16 and 18 inches to 10 inches; 14 to 8 inches; 12 to 5 and 6 inches; 10 to 4 and 5 inches; 8 to 3, 3½ and 4 inches; 6 to 2½, 3 and 3½ inches; 5 to 2 and 2½ inches; 4 to 1½ and 2 inches; 3½ to 1½ and 2 inches; 3 to 1¼ and 1½ inches; 2½ to 1 and 1¼ inches; 2 to ¾ and 1 inch; 1½ to ¾ inch.

Dimension C is subject to tolerances of plus or minus ¼ inch. In o.d. sizes, standard weight tees have ⅜-inch walls and extra strong have ½-inch walls.

Crosses and side outlet tees and crosses, reducing on run and/or outlet can be furnished in certain sizes. Prices on application.

For outlets 14 inches and larger, dimensions will be given on application.

Nom. Pipe Size Inches	Standard Thickness Schedule 40 Through 10 In.: Part No. 24 Full Size Outlet Each	Standard Thickness Schedule 40 Through 10 In.: Part No. 24A Reducing Outlet Each	Extra Strong Schedule 80 Through 8 In.: Part No. 25 Full Size Outlet Each	Extra Strong Schedule 80 Through 8 In.: Part No. 25A Reducing Outlet Each
1¼	$6.45	$6.75	$7.00	$7.75
1½	7.55	8.00	9.00	9.50
2	9.75	10.00	11.00	11.50
2½	12.00	13.75	14.25	15.75
3	15.00	17.25	20.00	22.50
3½	19.00	22.00	25.00	29.00
4	20.50	23.50	26.50	30.50
5	34.00	39.75	44.00	51.00
6	40.00	46.50	52.00	59.50
8	62.50	72.75	85.00	97.50
10	101.00	118.00	142.00	163.50
12	151.00	175.00	186.00	217.00
14 O.D.	211.00	211.00	267.00	267.00
16 O.D.	250.00	250.00	319.00	319.00
18 O.D.	320.00	320.00	420.00	420.00
20 O.D.	385.00	385.00	466.00	466.00
24 O.D.	615.00	615.00	924.00	924.00

Dimensions

Main Pipe Size Inches	Outlet Sizes Inches	Reducing Size On Run Inches	Dimension A Inches	Dimension B, In. Std. Wt.	Dimension B, In. Extra Strong	Dimension C Inches
1¼	1 –1¼	¾–1	1⅞	1⅜	1 5/16	3⅞
1½	1 –1½	¾–1¼	2¼	1⅝	1½	4¾
2	1 –2	¾–1½	2½	2	1 13/16	5½
2½	1 –2½	1 –2	3	2¼	2⅛	6½
3	1 –3	1¼–2½	3⅜	2⅝	2⅝	6⅞
3½	1 –3½	1½–3	3¾	3	2 15/16	7¾
4	1 –4	1½–3½	4⅛	3½	3¼	8⅛
5	1 –1½	2 –4	4⅜	3¾	3¾	9⅜
5	2 –5	2 –4	4⅞	3¾	3¾	9⅞
6	2½–4	2½–5	5⅝	4⅛	4⅛	11⅛
6	5 –6	2½–5	5⅝	4⅜	4⅜	11⅛
8	3½–4	3 –6	7	5¼	5¼	13
8	5 –8	3 –6	7	5½	5½	13
10	4	4 –8	8½	6⅜	6⅜	15½
10	5 –10	4 –8	8½	6¾	6¾	15½
12	5 –12	5 –10	10	8½	8½	18

Tube-Turn Lap Joint Welding Nipples

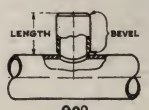
Seamless Steel

Has a square lap of the same thickness as the pipe wall. Order by part no.

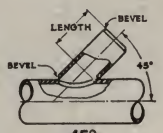
Nominal Pipe Size In.	Part No. 40-A Standard Each	Pipe Wall and Lap Thickness In.	Wt. Lb.	Part No. 42-A Extra Strong Each	Pipe Wall and Lap Thickness In.	Wt. Lb.	Lgth. In.	Diam. In.	Radius In.
1½	$4.45	.145	1	$4.70	.200	1½	4	2⅞	¼
2	5.75	.154	2¼	6.25	.218	3	6	3⅝	5/16
2½	6.50	.203	3½	7.15	.276	4½	6	4⅛	5/16
3	7.30	.216	4¾	8.25	.300	6¼	6	5	⅜
3½	8.10	.226	5½	9.40	.318	7½	6	5½	⅜
4	9.30	.237	6¾	10.90	.337	9	6	6 3/16	7/16
5	10.75	.258	10¾	13.50	.375	16½	8	7 5/16	7/16
6	12.75	.280	16 3/16	16.35	.432	22½	8	8½	½
8	16.00	.322	25½	24.00	.500	34½	8	10⅝	½
10	22.75	.365	40	35.75	.500	52	10	12¾	½
12	30.75	.375	47	48.75	.500	64½	10	15	½
14 OD	53.00	.375	61	72.00	.500	83	12	16¼	½
16 OD	72.00	.375	74¼	93.00	.500	94½	12	18½	½
18 OD	92.00	.375	85¼	114.00	.500	108	12	21	½
20 OD	113.00	.375	95½	136.00	.500	138	12	23	½
24 OD	138.00	.375	126	162.00	.500	167	12	27¼	½

Tube-Turn Seamless Steel Shaped Welding Nipples

Used in welding risers or branches from a main or header. Templates eliminated, as nipple itself is used for marking cut in header. Both ends properly beveled; and shaped ends formed to follow contour of header pipe.



90°



45°

Nom. Pipe Size In.	Shaped to Fit Headers Sizes, In.	Lgth. In.	90° to Header No. 100 Std. Wt. Each	Wt. Lb.	No. 101 Extra Strong Each	Wt. Lb.	45° to Header No. 102 Std. Wt. Each	Wt. Lb.	No. 103 Extra Strong Each	Wt. Lb.
1¼	1¼–16	6	$.70	1¼	$.90	1½	$.80	1¼	$.95	1½
1½	1½–16	6	.80	1½	1.05	2	.85	1½	1.15	2
2	2 –16	6	.95	2	1.25	2½	1.05	2¼	1.40	3
2½	2½–16	6	1.20	3	1.70	4	1.35	3½	1.95	4½
3	3 –20	6	1.50	4	2.25	5½	1.80	5	2.65	6½
3½	3½–20	6	1.85	5	2.50	6½	2.30	6	3.10	8
4	4 –24	6	2.20	6	2.75	8	2.75	7	3.50	10
5	5 –24	8	3.70	10½	5.00	15	4.70	13	6.40	18
6	6 –24	8	4.50	14	6.75	21	6.00	18	9.00	26
8	8 –24	8	7.50	22	11.50	33	10.25	29	15.50	43
10	10 –24	10	12.00	39	18.50	53	17.00	51	26.00	69
12	12 –24	10	15.75	50	23.50	65	23.00	66	35.00	87

Pipe Cutting & Threading

We are prepared to cut and thread pipe to measurement or sketch.

Tube-Turn Welding Reducers

Concentric Type

Standard Pipe Thickness— Part No. 90
Extra Strong Pipe Thickness— Part No. 91

Eccentric Type

Standard Pipe Thickness— Part No. 92
Extra Strong Pipe Thickness— Part No. 93

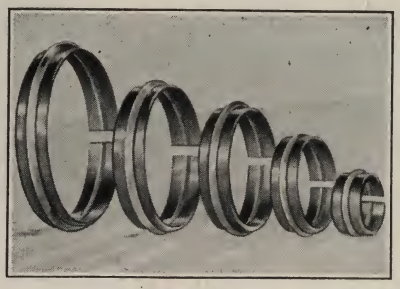
Concentric Type

Eccentric Type

Nominal Pipe Size Inches	Standard Each	Extra Strong Each	Overall Length Inches	Weight Pounds Standard	Weight Pounds Extra Strong
1 x ¾	$1.50	$2.75	2	⅜	½
1 x ½	1.50	2.75	2	⅜	½
1 x ⅜	1.50	2.75	2	⅜	½
1¼x 1	2.00	3.50	2	⅜	⅝
1¼x ¾	2.00	3.50	2	⅜	⅝
1¼x ½	2.50	4.50	2	⅜	⅝
1½x 1¼	2.00	3.50	2½	½	¾
1½x 1	2.00	3.50	2½	½	¾
1½x ¾	2.50	4.50	2½	½	¾
1½x ½	2.50	4.50	2½	½	¾
2 x 1½	2.25	3.75	3	¾	1¼
2 x 1¼	2.25	3.75	3	¾	1¼
2 x 1	2.25	3.75	3	¾	1¼
2 x ¾	2.75	4.75	3	¾	1¼
2½x 2	2.50	4.50	3½	1½	2
2½x 1½	2.75	5.00	3½	1½	2
2½x 1¼	2.75	5.00	3½	1½	2
2½x 1	2.75	5.00	3½	1½	2
3 x 2½	3.00	5.25	3½	2	2¾
3 x 2	3.00	5.25	3½	2	2¾
3 x 1½	3.25	5.70	3½	2	2½
3 x 1¼	3.25	5.70	3½	2	2½
3½x 3	3.50	6.00	4	3	4
3½x 2½	3.50	6.00	4	2¾	3½
3½x 2	3.50	6.00	4	2¾	3½
3½x 1½	3.75	6.50	4	2½	3¼
3½x 1¼	3.75	6.50	4	2½	3¼
4 x 3½	4.00	7.00	4	3½	4¾
4 x 3	4.00	7.00	4	3½	4¾
4 x 2½	4.00	7.00	4	3¼	4¾
4 x 2	4.00	7.00	4	3	4¾
4 x 1½	4.50	8.00	4	3	4¾
5 x 4	6.00	10.50	5	6	8¼
5 x 3½	6.50	11.50	5	5¾	7¾
5 x 3	6.50	11.50	5	5½	7½
5 x 2½	6.50	11.50	5	5¼	7
5 x 2	6.50	11.50	5	5	6½
6 x 5	8.00	14.00	5½	8½	12
6 x 4	8.00	14.00	5½	8¼	11½
6 x 3½	9.00	15.75	5½	8¼	11
6 x 3	9.00	15.75	5½	8	10½
6 x 2½	9.00	15.75	5½	7¼	10
8 x 6	12.00	26.25	6	13¼	18¾
8 x 5	15.00	30.60	6	12	18
8 x 4	15.00	30.60	6	11	17
8 x 3½	15.00	30.60	6	10	16½
10 x 8	18.00	40.00	7	22	29½
10 x 6	20.00	44.00	7	21½	29½
10 x 5	26.00	48.00	7	21	28
10 x 4	26.00	48.00	7	20	25½
12 x10	32.00	56.00	8	28	36
12 x 8	36.00	63.00	8	25	34½
12 x 6	36.00	63.00	8	24¼	34
12 x 5	40.00	70.00	8	23	33½
14 x12	40.00	70.00	13	60	80
14 x10	40.00	70.00	13	60	80
14 x 8	45.00	78.75	13	60	80
14 x 6	50.00	87.50	13	60	80
16 x14	70.00	105.00	14	70	90
16 x12	70.00	105.00	14	70	90
16 x10	80.00	122.50	14	70	90
16 x 8	85.00	140.00	14	70	90
18 x16	85.00	148.00	15	85	115
18 x14	85.00	148.00	15	85	115
18 x12	95.00	166.00	15	85	115
18 x10	105.00	184.00	15	85	115
20 x18	90.00	157.50	20	125	170
20 x16	90.00	157.50	20	125	170
20 x14	100.00	175.00	20	125	170
20 x12	100.00	175.00	20	125	170
24 x20	140.00	245.00	20	150	200
24 x18	155.00	270.00	20	150	200
24 x16	170.00	295.00	20	150	200

Ends agree in o.d., i.d. and wall thickness with pipe they are to match.

Tube-Turn Welding Rings



Nom. Size In.	Width In.	Thickness In.	Standard Each	Standard For Pipe with I.D. In.	Standard Wt. Lb. per 100	Extra Strong Each	Extra Strong For Pipe with I.D. In.	Extra Strong Wt. Lb. per 100
¾	⅜	.042	$.10	.824	1½	$.10	.742	1¼
1	½	.042	.10	1.049	2½	.10	.957	2¼
1¼	½	.042	.10	1.380	3¼	.10	1.278	3
1½	½	.042	.13	1.610	3½	.13	1.500	3¼
2	⅝	.049	.13	2.067	5½	.13	1.939	5¼
2½	⅝	.049	.15	2.469	7½	.15	2.323	7
3	⅝	.049	.20	3.068	10	.20	2.900	9¼
3½	⅝	.065	.25	3.548	11¼	.25	3.364	11
4	13/16	.065	.25	4.026	23¼	.25	3.826	22¾
5	13/16	.083	.45	5.047	38¼	.45	4.813	37¾
6	13/16	.083	.65	6.065	45	.65	5.761	43¾
8	13/16	.083	.85	7.981	55½	.85	7.625	54¼
10	13/16	.083	.90	10.020	68½	.90	9.750	67¼
12	13/16	.083	.95	12.000	87½	.95	11.750	85

Rings for pipe other than standard or extra heavy (heaviest card weight) are priced at 35 per cent above the nominal size.

TUBE-TURN PRODUCTS

Available

(Not Illustrated)

Crosses • • • Saddles

Navy Specification—Super Tube-Turns

Light Gage Tube-Turns

Tube-Turns with Long Tangents

Schedule 160 Ells and Return Bends

Extra Long Radius 180° Bends

Double Extra Heavy Ells and Tees

Reinforced Laterals

• • •

Data Furnished On Request

Tube-Turn Welding Heads

Ellipsoidal in form and made from open hearth mild steel plate.

Ends are beveled 37½ degrees for welding, with 1/16-inch straight face.

Nominal Pipe Size In.	O. D. In.	Lgth. Over All In.	Standard Pipe Thickness Part No. 80: Thickness Wall In.	Wt., Lb.	Each	Extra Strong Pipe Thickness Part No. 81: Thickness Wall In.	Wt., Lb.	Each
1½	1.900	1½	.145	¼	$1.70	.200	⅜	$2.10
2	2.375	1½	.154	⅜	1.85	.218	¾	2.25
2½	2.875	1½	.203	¾	2.00	.276	1	2.50
3	3.500	2	.216	1½	2.40	.300	1¾	3.30
3½	4.000	2½	.226	1¾	3.20	.318	2½	4.25
4	4.500	2½	.237	2½	3.70	.337	3¼	4.90
5	5.563	3	.258	4½	4.90	.375	5½	5.85
6	6.625	3½	.280	6½	5.95	.432	9¼	7.50
8	8.625	4	.322	11¾	10.10	.500	16¾	12.20
10	10.750	5	.365	22	14.60	.500	26¾	18.50
12	12.750	6	.375	30¾	20.85	.500	38	25.00
*14	14.000	6½	.375	36⅞	24.00	.500	47	30.00
*16	16.000	7	.375	40	28.00	.500	53½	34.50
*18	18.000	8	.375	54	32.00	.500	72	38.50
*20	20.000	9	.375	77	35.50	.500	86	45.00
*24	24.000	10½	.375	92	41.75	.500	129½	49.00

*Outside diameter.

Tube-Turn Extras

Grade B Steel

Tube-Turns of Grade B steel are available on special order at an added cost of 20 per cent. This extra does not apply to Schedule 160 or Double Extra Strong Fittings since these items are regularly made from Grade B tubing.

Galvanizing

Add 33⅓ per cent to the net cost of fittings when galvanizing is required.

Special Beveling

Add 10 per cent to net cost of fittings when square ends or ends other than 37½° bevel are required.

Taper Ends

Ends furnished taper machined or ground to match special wall thickness pipe take a 10 per cent increase in price.

Odd Angles

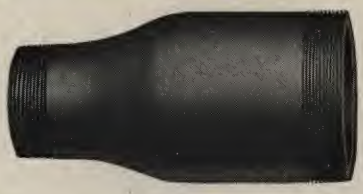
Tube-Turns cut to odd angles take price of nearest standard type from which they can be cut, plus 10 per cent.

Bull Plugs

Size Inches	Regular Each	Extra Heavy Each	Weight Pounds: Regular	Weight Pounds: Extra Heavy
2	$2.00	.....	3	....
2½	2.50	.....	...	....
3	3.50	$6.00	7¼	11½
4	4.50	8.00	10¾	20
5 3/16	6.00	.....	..	..
6	8.00	14.00	24	38
6⅝	9.00	.....	..	..
8	15.00	27.00	33	65
8¼	15.00	.....	..	..
10	25.00	45.00	58	111
12	30.00	60.00	90	...
*14O.D.	80.00	.....	..	...
*16O.D.	90.00	.....	..	...
18O.D.	100.00	.....	..	...

*Made of pipe ⅜-inch thick.

Wrought Reducing or Swaged Nipples



Made from standard weight pipe.

Size In.	Each	Wt. Lbs.	Wt. Lbs. per Ft.	Size In.	Each	Wt. Lbs.	Wt., Lbs. per Ft.
½x ¼	$1.00	¼	.852	4 x2½	$4.00	8	10.889
½x ⅜	1.00	¼	.852	4 x3	4.00	8	10.889
¾x ¼	1.25	⅜	1.134	4 x3½	4.00	8	10.889
¾x ⅜	1.25	⅜	1.134	4½x¼	6.50	10	12.750
¾x ½	1.25	⅜	1.134	4½x ⅜	6.50	10	12.750
1 x ¼	1.50	½	1.684	4½x ½	6.50	10	12.750
1 x ⅜	1.50	½	1.684	4½x ¾	6.50	10	12.750
1 x ½	1.50	½	1.684	4½x1	5.50	10	12.750
1 x ¾	1.50	½	1.684	4½x1¼	5.50	10	12.750
1¼x ¼	2.50	¾	2.281	4½x1½	5.50	10	12.750
1¼x ⅜	2.50	¾	2.281	4½x2	4.50	10	12.750
1¼x ½	2.50	¾	2.281	4½x2½	4.50	10	12.750
1¼x ¾	2.00	¾	2.281	4½x3	4.50	10	12.750
1¼x1	2.00	¾	2.281	4½x4	4.50	10	12.750
1½x ¼	2.50	⅞	2.731	5 x ½	7.50	12	14.810
1½x ⅜	2.50	⅞	2.731	5 x1	7.50	12	14.810
1½x ½	2.50	⅞	2.731	5 x1¼	7.50	12	14.810
1½x ¾	2.50	⅞	2.731	5 x1½	7.50	12	14.810
1½x1	2.00	⅞	2.731	5 x2	6.50	12	14.810
1½x1¼	2.00	⅞	2.731	5 x2½	6.50	12	14.810
2 x ¼	2.75	2	3.678	5 x3	6.50	12	14.810
2 x ⅜	2.75	2	3.678	5 x3½	6.50	12	14.810
2 x ½	2.75	2	3.678	5 x4	6.00	12	14.810
2 x ¾	2.75	2	3.678	5 x4½	6.00	12	14.810
2 x1	2.25	2	3.678	5 x4¾	6.00	12	14.810
2 x1¼	2.25	2	3.678	6 x ½	12.00	19	19.185
2 x1½	2.25	2	3.678	6 x1	12.00	19	19.185
2½x ¼	3.00	3½	5.819	6 x1¼	12.00	19	19.185
2½x ⅜	3.00	3½	5.819	6 x1½	12.00	19	19.185
2½x ½	3.00	3½	5.819	6 x2	10.00	19	19.185
2½x ¾	3.00	3½	5.819	6 x2½	9.00	19	19.185
2½x1	2.75	3½	5.819	6 x3	9.00	19	19.185
2½x1¼	2.75	3½	5.819	6 x3½	9.00	19	19.185
2½x1½	2.75	3½	5.819	6 x4	8.00	19	19.185
2½x2	2.50	3½	5.819	6 x4½	8.00	19	19.185
3 x ¼	3.50	5	7.616	6 x5 3/16	8.00	19	19.185
3 x ⅜	3.50	5	7.616	6 x5⅝	8.00	19	19.185
3 x ½	3.50	5	7.616	7 x2	14.00	25	23.540
3 x ¾	3.50	5	7.616	7 x2½	14.00	25	23.540
3 x1	3.25	5	7.616	7 x3	14.00	25	23.540
3 x1¼	3.25	5	7.616	7 x3½	12.00	25	23.540
3 x1½	3.25	5	7.616	7 x4	12.00	25	23.540
3 x2	3.00	5	7.616	7 x4½	12.00	25	23.540
3 x2½	3.00	5	7.616	7 x5 3/16	10.00	25	23.540
3½x ¼	4.00	6¾	9.202	7 x6	10.00	25	23.540
3½x ⅜	4.00	6¾	9.202	7 x6¼	10.00	25	23.540
3½x ½	4.00	6¾	9.202	7 x6⅝	10.00	25	23.540
3½x ¾	4.00	6¾	9.202	8 x2	18.00	30	25–28
3½x1	3.75	6¾	9.202	8 x2½	18.00	30	25–28
3½x1¼	3.75	6¾	9.202	8 x3	18.00	30	25–28
3½x1½	3.75	6¾	9.202	8 x3½	15.00	30	25–28
3½x2	3.50	6¾	9.202	8 x4	15.00	30	25–28
3½x2½	3.50	6¾	9.202	8 x4½	15.00	30	25–28
3½x3	3.50	6¾	9.202	8 x5 3/16	15.00	30	25–28
4 x ¼	5.50	8	10.889	8 x6	12.00	30	25–28
4 x ⅜	5.50	8	10.889	8 x6¼	12.00	30	25–28
4 x ½	5.50	8	10.889	8 x6⅝	12.00	30	25–28
4 x ¾	5.50	8	10.889	10 x2	30.00	42	35–40
4 x1	4.50	8	10.889	10 x2½	30.00	42	35–40
4 x1¼	4.50	8	10.889	10 x3	30.00	42	35–40
4 x1½	4.50	8	10.889	10 x4	26.00	42	35–40
4 x2	4.00	8	10.889	10 x4½	26.00	42	35–40

Swaged nipples with plain ends, beveled ends or Victaulic grooved ends, take same list as threaded.

For swaged nipples longer or shorter than standard, add 20%. These lengths not to exceed 25% over or under standard length. For swaged nipples with rotary drilling neck, add 33⅓%.

Tube-Turn Lapped Forged Steel Flanges

Available in 150-lb. to 1500-lb. standards. Made on special order from carbon molybdenum.

Series 15—150 Pound Amer. Std.—Part No. 110

Nom. Pipe Size In.	Each	Diam. Flange In.	Thick. Flange In.	Overall Height In.	Diam. Bore In.	Radius In.	Approx. Weight Lb.
½	$8.00	3½	7/16	⅝	0.90	⅛	1
¾	8.00	3⅞	½	⅝	1.11	⅛	1½
1	8.00	4¼	9/16	11/16	1.38	⅛	2
1¼	9.00	4⅝	⅝	13/16	1.72	3/16	2½
1½	10.00	5	11/16	⅞	1.96	¼	3
2	11.00	6	¾	1	2.46	5/16	5
2½	13.00	7	⅞	1⅛	2.97	5/16	8
3	15.00	7½	15/16	1 3/16	3.60	⅜	9
3½	19.00	8½	15/16	1¼	4.10	⅜	11
4	20.00	9	15/16	1 5/16	4.60	7/16	12
5	24.00	10	15/16	1 7/16	5.66	7/16	13
6	27.00	11	1	1 9/16	6.72	½	18
8	35.00	13½	1⅛	1¾	8.78	½	28
10	48.00	16	1 3/16	1 15/16	10.91	½	37
12	60.00	19	1¼	2 3/16	12.90	½	60
14 O.D.	80.00	21	1⅜	3⅛	14.17	½	81
16 O.D.	100.00	23½	1 7/16	3 7/16	16.19	½	103
18 O.D.	125.00	25	1 9/16	3 13/16	18.19	½	146
20 O.D.	150.00	27½	1 11/16	4 1/16	20.19	½	185
24 O.D.	240.00	32	1⅞	4⅜	24.19	½	260

Series 30—300 Pound Amer. Std.—Part No. 111

½	$8.00	3¾	9/16	⅞	0.90	⅛	1½
¾	8.00	4⅝	⅝	1	1.11	⅛	2½
1	8.00	4⅞	11/16	1 1/16	1.38	⅛	3
1¼	9.00	5¼	¾	1 1/16	1.72	3/16	4½
1½	10.00	6⅛	13/16	1 3/16	1.96	¼	6½
2	11.00	6½	⅞	1 5/16	2.46	5/16	7
2½	13.00	7½	1	1½	2.97	5/16	10
3	15.00	8¼	1⅛	1 11/16	3.60	⅜	13
3½	19.00	9	1 3/16	1¾	4.10	⅜	16
4	20.00	10	1¼	1⅞	4.60	7/16	21
5	24.00	11	1⅜	2	5.66	7/16	26
6	27.00	12½	1 7/16	2 1/16	6.72	½	35
8	35.00	15	1⅝	2 7/16	8.78	½	54
10	48.00	17½	1⅞	3¾	10.91	½	91
12	60.00	20½	2	4	12.90	½	139
14 O.D.	80.00	23	2⅛	4⅜	14.17	½	189
16 O.D.	100.00	25½	2¼	4¾	16.19	½	240
18 O.D.	125.00	28	2⅜	5⅛	18.19	½	305
20 O.D.	150.00	30½	2½	5½	20.19	½	375
24 O.D.	240.00	36	2¾	6	24.19	½	530

*Series 40—400 Pound Amer. Std.—Part No. 112

4	$20.00	10	1⅜	2	4.60	7/16	22
5	24.00	11	1½	2⅛	5.66	7/16	29
6	27.00	12½	1⅝	2¼	6.72	½	37
8	35.00	15	1⅞	2 11/16	8.78	½	59
10	48.00	17½	2⅛	4	10.91	½	95
12	60.00	20½	2¼	4¼	12.90	½	152
14 O.D.	80.00	23	2⅜	4⅝	14.17	½	210
16 O.D.	100.00	25½	2½	5	16.19	½	280
18 O.D.	125.00	28	2⅝	5⅜	18.19	½	345
20 O.D.	150.00	30½	2¾	5¾	20.19	½	420
24 O.D.	240.00	36	3	6¼	24.19	½	615

Series 60—600 Pound Amer. Std.—Part No. 113

½	$9.50	3¾	9/16	⅞	0.90	⅛	2
¾	9.50	4⅝	⅝	1	1.11	⅛	3
1	10.00	4⅞	11/16	1 1/16	1.38	⅛	3½
1¼	10.75	5¼	13/16	1⅛	1.72	3/16	4½
1½	11.75	6⅛	⅞	1¼	1.96	¼	6½
2	13.00	6½	1	1 7/16	2.46	5/16	8
2½	15.00	7½	1⅛	1⅝	2.97	5/16	11
3	18.50	8¼	1¼	1 13/16	3.60	⅜	14
3½	22.50	9	1⅜	1 15/16	4.10	⅜	20
4	33.00	10¾	1½	2⅛	4.60	7/16	31
5	46.00	13	1¾	2⅜	5.66	7/16	63
6	55.00	14	1⅞	2⅝	6.72	½	78
8	80.00	16½	2 5/16	3	8.78	½	112
10	125.00	20	2½	4⅜	10.91	½	195
12	150.00	22	2⅝	4⅝	12.90	½	240
14 O.D.	180.00	23¾	2¾	5	14.17	½	290
16 O.D.	240.00	27	3	5½	16.19	½	400
18 O.D.	300.00	29¼	3¼	6	18.19	½	469
20 O.D.	360.00	32	3½	6½	20.19	½	604
24 O.D.	540.00	37	4	7¼	24.19	½	866

Flanges furnished faced, drilled, and spot faced or back faced. Flanges available with hubs of slipon flange dimensions.

*For sizes 3½-inch and smaller, use 600-pound Amer. Std.

Tube-Turn Forged Steel Welding Neck Flanges

Forged from high quality steel, especially selected for weldability. Conforms to the American Standards and is accurately machined. Bored, faced, drilled and spot faced.

Has a 1/16-inch raised face. Hub ends are beveled 37½ degrees for welding with 1/16-inch straight face.

Series 15—Part No. 30

Bored for use with standard weight pipe in sizes 12 inches and smaller and for o.d. pipe with ⅜-inch wall in sizes 14 inches and larger.

Conforms to the 150-pound American Standards.

Nominal Pipe Size In.	Each	Diameter, In. Flange	Diameter, In. Raised Face	Diameter, In. Bore	Thickness Flange In.	Overall Ht. In.	Standard Drilling Template No. of Bolts	Standard Drilling Template Size Bolts In.	Standard Drilling Template Bolt Circle In.	Approx. Wt. Lb.
½	$11.00	3½	1⅜	0.62	7/16	1⅞	4	½	2⅜	2
¾	11.00	3⅞	1 11/16	0.82	½	2 1/16	4	½	2¾	2
1	11.00	4¼	2	1.05	9/16	2 3/16	4	½	3⅛	2½
1¼	11.00	4⅝	2½	1.38	⅝	2¼	4	½	3½	2½
1½	11.00	5	2⅞	1.61	11/16	2 7/16	4	½	3⅞	4
2	11.00	6	3⅝	2.07	¾	2½	4	⅝	4¾	6
2½	13.00	7	4⅛	2.47	⅞	2¾	4	⅝	5½	10
3	15.00	7½	5	3.07	15/16	2¾	4	⅝	6	11½
3½	19.00	8½	5½	3.55	15/16	2 13/16	8	⅝	7	12
4	20.00	9	6 3/16	4.03	15/16	3	8	⅝	7½	16
5	24.00	10	7 5/16	5.05	15/16	3½	8	¾	8½	20
6	27.00	11	8½	6.07	1	3½	8	¾	9½	24
8	44.00	13½	10⅝	7.98	1⅛	4	8	¾	11¾	42
10	62.00	16	12¾	10.02	1 3/16	4	12	⅞	14¼	55
12	96.00	19	15	†	1¼	4½	12	⅞	17	85
14	130.00	21	16¼	†	1⅜	5	12	1	18¾	114
16	165.00	23½	18½	†	1 7/16	5	16	1	21¼	142
18	220.00	25	21	†	1 9/16	5½	16	1⅛	22¾	155
20	290.00	27½	23	†	1 11/16	5 11/16	20	1⅛	25	170
24	380.00	32	27¼	†	1⅞	6	20	1¼	29½	260

Series 30—Part No. 31

Bored for standard weight pipe in sizes 12 inches and smaller, and for o.d. pipe with ⅜-inch wall in sizes 14 inches and larger.

Sizes 12 inches and smaller can also be furnished bored for extra strong pipe.

Conforms to the 300-pound American Steel Flange Standard in diameter and thickness.

½	$11.00	3¾	1⅜	†	9/16	2 1/16	4	½	2⅝	2
¾	11.00	4⅝	1 11/16	†	⅝	2¼	4	⅝	3¼	3
1	11.00	4⅞	2	....	11/16	2 7/16	4	⅝	3½	4
1¼	11.00	5¼	2½	....	¾	2 9/16	4	⅝	3⅞	5½
1½	11.00	6⅛	2⅞	....	13/16	2 11/16	4	¾	4½	7
2	11.00	6½	3⅝	....	⅞	2¾	8	⅝	5	8
2½	13.00	7½	4⅛	....	1	3	8	¾	5⅞	12
3	15.00	8¼	5	....	1⅛	3⅛	8	¾	6⅝	16
3½	19.00	9	5½	....	1 3/16	3 3/16	8	¾	7¼	20
4	20.00	10	6 3/16	....	1¼	3⅜	8	¾	7⅞	25
5	24.00	11	7 5/16	....	1⅜	3⅞	8	¾	9¼	34
6	27.00	12½	8½	....	1 7/16	3⅞	12	¾	10⅝	45
8	44.00	15	10⅝	....	1⅝	4⅜	12	⅞	13	70
10	62.00	17½	12¾	....	1⅞	4⅝	16	1	15¼	99
12	96.00	20½	15	....	2	5⅛	16	1⅛	17¾	142
14	130.00	23	16¼	....	2⅛	5⅝	20	1⅛	20¼	186
16	165.00	25½	18½	....	2¼	5¾	20	1¼	22½	246
18	220.00	28	21	....	2⅜	6¼	24	1¼	24¾	305
20	290.00	30½	23	....	2½	6⅜	24	1¼	27	378
24	380.00	36	27¼	....	2¾	6⅝	24	1½	32	545

†Must be specified when ordering.

Tube-Turn Forged Steel Welding Neck Flanges

Has a ¼-inch raised face. Hub ends are beveled 37½° for welding with 1/16-inch straight face.

Specify diameter of bore when ordering.

Series 40—Part No. 32

Conforms to the 400-pound American Steel Flange Standard in diameter and thickness. For sizes 3½ inches and smaller, use 600-pound American Standard.

Nom. Pipe Size In.	Each	Diam. Flge. In.	Diam. Raised Face, In.	Thick. Flange In.	Height Over All In.	Standard Drillings Template No. of Bolts	Stud Bolts Inches Diam.	Stud Bolts Inches Lgth.	Bolt Circle In.	Approx. Wt. Lb.
4	$20.00	10	6 3/16	1⅜	3½	8	⅞	5¼	7⅞	30
5	24.00	11	7 5/16	1½	4	8	⅞	5½	9¼	39
6	27.00	12½	8½	1⅝	4 1/16	12	⅞	5¾	10⅝	49
8	44.00	15	10⅝	1⅞	4⅝	12	1	6½	13	78
10	62.00	17½	12¾	2⅛	4⅞	16	1⅛	7¼	15¼	110
12	96.00	20½	15	2¼	5⅜	16	1¼	7¾	17¾	160
14 O.D.	130.00	23	16¼	2⅜	5⅞	20	1¼	8	20¼	233
16 O.D.	165.00	25½	18½	2½	6	20	1⅜	8½	22½	294
18 O.D.	220.00	28	21	2⅝	6½	24	1⅜	8¾	24¾	360
20 O.D.	290.00	30½	23	2¾	6⅝	24	1½	9½	27	445
24 O.D.	380.00	36	27¼	3	6⅞	24	1¾	10½	32	640

Series 60—Part No. 33

Conforms to the 600-pound American Flange Standard in diameter and thickness.

½	$16.30	3¾	1⅜	9/16	2 1/16	4	½	2¾	2⅝	3
¾	16.30	4⅝	1 11/16	⅝	2¼	4	⅝	3¼	3¼	3½
1	16.30	4⅞	2	11/16	2 7/16	4	⅝	3¼	3½	4
1¼	16.30	5¼	2½	13/16	2⅝	4	⅝	3½	3⅞	5
1½	16.30	6⅛	2⅞	⅞	2¾	4	¾	4	4½	8
2	16.30	6½	3⅝	1	2⅞	8	⅝	4	5	10
2½	19.00	7½	4⅛	1⅛	3⅛	8	¾	4½	5⅞	14
3	23.00	8¼	5	1¼	3¼	8	¾	4¾	6⅝	18
3½	29.00	9	5½	1⅜	3⅜	8	⅞	5¼	7¼	26
4	39.00	10¾	6 3/16	1½	4	8	⅞	5½	8½	37
5	53.50	13	7 5/16	1¾	4½	8	1	6¼	10½	68
6	63.50	14	8½	1⅞	4⅝	12	1	6½	11½	73
8	90.00	16½	10⅝	2 3/16	5¼	12	1⅛	7½	13¾	112
10	138.00	20	12¾	2½	6	16	1¼	8¼	17	189
12	188.00	22	15	2⅝	6⅛	20	1¼	8½	19¼	226
14 O.D.	200.00	23¾	16¼	2¾	6½	20	1⅜	9	20¾	347
16 O.D.	270.00	27	18½	3	7	20	1½	9¾	23¾	481
18 O.D.	330.00	29¼	21	3¼	7¼	20	1⅝	10½	25¾	555
20 O.D.	400.00	32	23	3½	7½	24	1⅝	11¼	28½	690
24 O.D.	590.00	37	27¼	4	8	24	1⅞	12¾	33	977

Series 90—Part No. 34

Conforms to the 900-pound American Steel Flange Standard in diameter and thickness.

1	$27.00	5⅞	2	1⅛	2⅞	4	⅞	4¾	4	8½
1¼	27.00	6¼	2½	1⅛	2⅞	4	⅞	4¾	4⅜	10
1½	27.00	7	2⅞	1¼	3¼	4	1	5¼	4⅞	14
2	27.00	8½	3⅝	1½	4	8	⅞	5½	6½	24
2½	35.00	9⅝	4⅛	1⅝	4⅛	8	1	6	7½	36
3	35.00	9½	5	1½	4	8	⅞	5½	7½	29
4	62.00	11½	6 3/16	1¾	4½	8	1⅛	6½	9¼	51
5	85.00	13¾	7 5/16	2	5	8	1¼	7¼	11	86
6	104.00	15	8½	2 3/16	5½	12	1⅛	7½	12½	110
8	190.00	18½	10⅝	2½	6⅜	12	1⅜	8½	15½	187
10	270.00	21½	12¾	2¾	7¼	16	1⅜	9	18½	268
12	360.00	24	15	3⅛	7⅞	20	1⅜	9¾	21	372
14 O.D.	560.00	25¼	16¼	3⅜	8⅜	20	1½	10½	22	562
16 O.D.	690.00	27¾	18½	3½	8½	20	1⅝	11	24¼	685
18 O.D.	925.00	31	21	4	9	20	1⅞	12¾	27	924
20 O.D.	1160.00	33¾	23	4¼	9¾	20	2	13½	29½	1164
24 O.D.	2100.00	41	27¼	5½	11½	20	2½	17	35½	2107

Series 150—Part No. 35

Conforms to the 1500-pound American Steel Flange Standard in diameter and thickness.

½	$27.00	4¾	1⅜	⅞	2⅜	4	¾	4	3¼	7
¾	27.00	5⅛	1 11/16	1	2¾	4	¾	4¼	3½	7
1	27.00	5⅞	2	1⅛	2⅞	4	⅞	4¾	4	8½
1¼	27.00	6¼	2½	1⅛	2⅞	4	⅞	4¾	4⅜	10
1½	27.00	7	2⅞	1¼	3¼	4	1	5¼	4⅞	14
2	27.00	8½	3⅝	1½	4	8	⅞	5½	6½	24
2½	35.00	9⅝	4⅛	1⅝	4⅛	8	1	6	7½	36
3	46.00	10½	5	1⅞	4⅝	8	1⅛	6¾	8	48
4	72.00	12¼	6 3/16	2⅛	4⅞	8	1¼	7½	9½	69
5	125.00	14¾	7 5/16	2⅞	6⅛	8	1½	9½	11½	132
6	160.00	15½	8½	3¼	6¾	12	1⅜	10	12½	164
8	265.00	19	10⅝	3⅝	8⅜	12	1⅝	11¼	15½	273
10	440.00	23	12¾	4¼	10	12	1⅞	13¼	19	454
12	660.00	26½	15	4⅞	11⅛	16	2	14¾	22½	690

Tube-Turn Forged Steel Flanges

Screwed and Slip-On Welding

Slip-On Flange

Screwed Flange

Threaded companion flanges (screwed) are forged from selected steel and are accurately machined.

Slip-on flanges are sometimes used in place of welding neck flanges. These flanges can readily be used with Tube-Turns. Flanges are bored to slip over pipe.

Flanges are furnished faced, drilled and spot faced or back faced.

Series 15—150-Pound American Standard

Part No. 60, Screwed			Part No. 50, Slip-On Welding			
Nom. Pipe Size In.	Each	Diam. Flange In.	Diam. Raised Face In.	Thickness Flange In.	Height Overall In.	Approx. Weight Lb.
1/2	$8.00	3 1/2	1 3/8	7/16	5/8	1
3/4	8.00	3 7/8	1 11/16	1/2	5/8	1 1/2
1	8.00	4 1/4	2	9/16	11/16	2
1 1/4	9.00	4 5/8	2 1/2	5/8	13/16	2 1/2
1 1/2	10.00	5	2 7/8	11/16	7/8	3
2	11.00	6	3 5/8	3/4	1	5
2 1/2	13.00	7	4 1/8	7/8	1 1/8	8
3	15.00	7 1/2	5	15/16	1 3/16	9
3 1/2	19.00	8 1/2	5 1/2	15/16	1 1/4	11
4	20.00	9	6 3/16	15/16	1 5/16	12
5	24.00	10	7 5/16	15/16	1 7/16	13
6	27.00	11	8 1/2	1	1 9/16	18
8	35.00	13 1/2	10 5/8	1 1/8	1 3/4	28
10	48.00	16	12 3/4	1 3/16	1 15/16	37
12	60.00	19	15	1 1/4	2 3/16	60
14 O.D.	80.00	21	16 1/4	1 3/8	2 1/4	77
16 O.D.	100.00	23 1/2	18 1/2	1 7/16	2 1/2	93
18 O.D.	125.00	25	21	1 9/16	2 11/16	120
20 O.D.	150.00	27 1/2	23	1 11/16	2 7/8	155
24 O.D.	240.00	32	27 1/4	1 7/8	3 1/4	210

Series 30—300-Pound American Standard

Part No. 61, Screwed			Part No. 51, Slip-On Welding			
1/2	$8.00	3 3/4	1 3/8	9/16	7/8	1 1/2
3/4	8.00	4 5/8	1 11/16	5/8	1	2 1/2
1	8.00	4 7/8	2	11/16	1 1/16	3
1 1/4	9.00	5 1/4	2 1/2	3/4	1 1/16	4 1/2
1 1/2	10.00	6 1/8	2 7/8	13/16	1 3/16	6 1/2
2	11.00	6 1/2	3 5/8	7/8	1 5/16	7
2 1/2	13.00	7 1/2	4 1/8	1	1 1/2	10
3	15.00	8 1/4	5	1 1/8	1 11/16	13
3 1/2	19.00	9	5 1/2	1 3/16	1 3/4	16
4	20.00	10	6 3/16	1 1/4	1 7/8	21
5	24.00	11	7 5/16	1 3/8	2	26
6	27.00	12 1/2	8 1/2	1 7/16	2 1/16	35
8	35.00	15	10 5/8	1 5/8	2 7/16	54
10	48.00	17 1/2	12 3/4	1 7/8	2 5/8	77
12	60.00	20 1/2	15	2	2 7/8	110
14 O.D.	80.00	23	16 1/4	2 1/8	3	164
16 O.D.	100.00	25 1/2	18 1/2	2 1/4	3 1/4	220
18 O.D.	125.00	28	21	2 3/8	3 1/2	280
20 O.D.	150.00	30 1/2	23	2 1/2	3 3/4	325
24 O.D.	240.00	36	27 1/4	2 3/4	4 3/16	490

*Series 40—400-Pound American Standard

Part No. 62, Screwed			Part No. 52, Slip-On Welding			
Nom. Pipe Size In.	Each	Diam. Flange In.	Diam. Raised Face In.	Thickness Flange In.	Height Overall In.	Approx. Weight Lb.
4	$20.00	10	6 3/16	1 3/8	2	24
5	24.00	11	7 5/16	1 1/2	2 1/8	31
6	27.00	12 1/2	8 1/2	1 5/8	2 1/4	39
8	35.00	15	10 5/8	1 7/8	2 11/16	63
10	48.00	17 1/2	12 3/4	2 1/8	2 7/8	91
12	60.00	20 1/2	15	2 1/4	3 1/8	129
14 O.D.	80.00	23	16 1/4	2 3/8	3 5/16	191
16 O.D.	100.00	25 1/2	18 1/2	2 1/2	3 11/16	253
18 O.D.	125.00	28	21	2 5/8	3 7/8	310
20 O.D.	150.00	30 1/2	23	2 3/4	4	378
24 O.D.	240.00	36	27 1/4	3	4 1/2	539

*Series 40, sizes 3 1/2-inch and smaller, use 600-pound American Standard.

Series 60—600-Pound American Standard

Part No. 63, Screwed			Part No. 53, Slip-On Welding			
1/2	$9.50	3 3/4	1 3/8	9/16	7/8	2
3/4	9.50	4 5/8	1 11/16	5/8	1	3
1	10.00	4 7/8	2	11/16	1 1/16	3 1/2
1 1/4	10.75	5 1/4	2 1/2	13/16	1 1/8	4 1/2
1 1/2	11.75	6 1/8	2 7/8	7/8	1 1/4	6 1/2
2	13.00	6 1/2	3 5/8	1	1 7/16	8
2 1/2	15.00	7 1/2	4 1/8	1 1/8	1 5/8	12
3	18.50	8 1/4	5	1 1/4	1 13/16	15
3 1/2	22.50	9	5 1/2	1 3/8	1 15/16	21
4	33.00	10 3/4	6 3/16	1 1/2	2 1/8	33
5	46.00	13	7 5/16	1 3/4	2 3/8	63
6	55.00	14	8 1/2	1 7/8	2 5/8	80
8	80.00	16 1/2	10 5/8	2 3/16	3	97
10	125.00	20	12 3/4	2 1/2	3 3/8	177
12	150.00	22	15	2 5/8	3 5/8	215
14 O.D.	180.00	23 3/4	16 1/4	2 3/4	3 11/16	259
16 O.D.	240.00	27	18 1/2	3	4 3/16	366
18 O.D.	300.00	29 1/4	21	3 1/4	4 5/8	476
20 O.D.	360.00	32	23	3 1/2	5	612
24 O.D.	540.00	37	27 1/4	4	5 1/2	876

Tube-Turn Forged Steel Flanges

Blind Flanges

Nom. Pipe Size In.	Series 15 150-Pound Part No. 70 Each	Wt. Lb.	Series 30 300-Pound Part No. 71 Each	Wt. Lb.	Series 40 400-Pound Part No. 72 Each	Wt. Lb.	Series 60 600-Pound Part No. 73 Each	Wt. Lb.
½	$11.50	2	$11.50	2	*	*	$11.50	2
¾	11.50	2	11.50	3	*	*	11.50	3
1	11.50	2	11.50	4	*	*	11.50	4
1¼	11.50	3	11.50	6	*	*	11.50	6
1½	11.50	3	11.50	7	*	*	11.50	8
2	12.60	4	12.60	8	*	*	12.60	10
2½	14.70	7	14.70	12	*	*	14.70	15
3	17.05	9	17.05	16	*	*	17.05	20
3½	21.65	13	21.65	21	*	*	21.65	29
4	23.70	17	23.70	27	$23.70	33	40.00	41
5	28.20	20	28.20	35	28.20	44	56.00	68
6	31.60	26	31.60	50	31.60	61	66.00	86
8	42.00	45	42.00	81	42.00	100	96.00	139
10	58.00	70	58.00	127	58.00	155	150.00	231
12	76.00	110	76.00	184	76.00	226	180.00	295
14 O.D.	126.00	131	126.00	236	126.00	310	216.00	378
16 O.D.	147.00	170	147.00	307	147.00	398	288.00	527
18 O.D.	210.00	209	210.00	390	210.00	502	360.00	665
20 O.D.	252.00	272	252.00	492	252.00	621	432.00	855
24 O.D.	320.00	411	320.00	754	320.00	936	648.00	1175

Reducing Flanges—Screwed and Slip-On

Bored, Faced, Drilled, and Spot Faced

Screwed

Slip-On

Series 15 150-Pound No. 130 Screwed No. 120 Slip-On Size Inches	Each	Series 30 300-Pound No. 131 Screwed No. 121 Slip-On Size Inches	Each	Series 40 400-Pound No. 132 Screwed No. 122 Slip-On Size Inches	Each	Series 60 600-Pound No. 133 Screwed No. 123 Slip-On Size Inches	Each
1 x 6	$21.00	1 x 6½	$21.00	For Flange Diameters Smaller Than 10-Inch Use 600-Pound Flanges		1 x 6½	$21.00
1¼x 6	21.00	1¼x 6½	21.00			1¼x 6½	21.00
1½x 6	21.00	1½x 6½	21.00			1½x 6½	21.00
1½x 7	24.50	1½x 7½	24.50			1½x 7½	24.50
2 x 7	24.50	2 x 7½	24.50			2 x 7½	24.50
1½x 7½	28.00	1½x 8¼	28.00			1½x 8¼	28.00
2 x 7½	28.00	2 x 8¼	28.00			2 x 8¼	28.00
2½x 7½	28.00	2½x 8¼	28.00			2½x 8¼	28.00
2 x 8½	35.00	2 x 9	35.00			2 x 9	35.00
2½x 8½	35.00	2½x 9	35.00			2½x 9	35.00
3 x 8½	35.00	3 x 9	35.00			3 x 9	35.00
2 x 9	37.00	2 x10	37.00	2 x10	$37.00	2 x10¾	57.00
2½x 9	37.00	2½x10	37.00	2½x10	37.00	2½x10¾	57.00
3 x 9	37.00	3 x10	37.00	3 x10	37.00	3 x10¾	57.00
2 x10	44.00	2 x11	44.00	2 x11	44.00	2 x13	79.00
2½x10	44.00	2½x11	44.00	2½x11	44.00	2½x13	79.00
3 x10	44.00	3 x11	44.00	3 x11	44.00	3 x13	79.00
3½x10	44.00	3½x11	44.00	3½x11	44.00	4 x13	79.00
4 x10	44.00	4 x11	44.00	4 x11	44.00	2 x14	94.00
2 x11	49.00	2 x12½	49.00	2 x12½	49.00	2½x14	94.00
2½x11	49.00	2½x12½	49.00	2½x12½	49.00	3 x14	94.00
3 x11	49.00	3 x12½	49.00	3 x12½	49.00	4 x14	94.00
3½x11	49.00	3½x12½	49.00	3½x12½	49.00	5 x14	94.00
4 x11	49.00	4 x12½	49.00	4 x12½	49.00	3 x16½	136.00
5 x11	49.00	5 x12½	49.00	5 x12½	49.00	4 x16½	136.00
3 x13½	63.00	3 x15	63.00	3 x15	63.00	5 x16½	136.00
3½x13½	63.00	3½x15	63.00	3½x15	63.00	6 x16½	136.00
4 x13½	63.00	4 x15	63.00	4 x15	63.00	4 x20	212.50
5 x13½	63.00	5 x15	63.00	5 x15	63.00	5 x20	212.50
6 x13½	63.00	6 x15	63.00	6 x15	63.00	6 x20	212.50
3½x16	86.00	3½x17½	86.00	3½x17½	86.00	8 x20	212.50
4 x16	86.00	4 x17½	86.00	4 x17½	86.00	6 x22	255.00
5 x16	86.00	5 x17½	86.00	5 x17½	86.00	8 x22	255.00
6 x16	86.00	6 x17½	86.00	6 x17½	86.00	10 x22	255.00
8 x16	86.00	8 x17½	86.00	8 x17½	86.00		
5 x19	108.00	6 x20½	108.00	6 x20½	108.00		
6 x19	108.00	8 x20½	108.00	8 x20½	108.00		
8 x19	108.00	10 x20½	108.00	10 x20½	108.00		
10 x19	108.00						

Facing of Flanges

The 150 and 300-pound reducing slip-on welding flanges are regularly furnished with a raised face 1/16-inch high.

The 400 and 600-pound reducing slip-on welding flanges are regularly furnished with a male face ¼-inch high (large male), or with a female face 3/16-inch deep (large female). Orders must specify which facing is wanted.

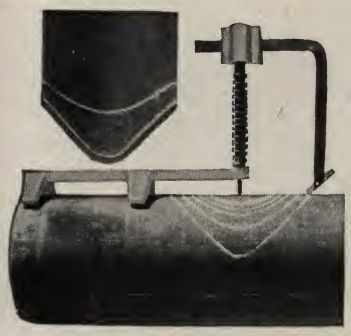
*For sizes 3½-inch and smaller, Series 40, use 600-pound.

American Standard

The diameter, thickness, facing, and drilling of the flanges shown on this page conform to the American Steel Flange Standard (B16e-1932).

The prices given include drilling to the American Steel Flange Standard, and spot facing. No deduction is made if flanges are ordered faced only.

Jewel Pipe Markers

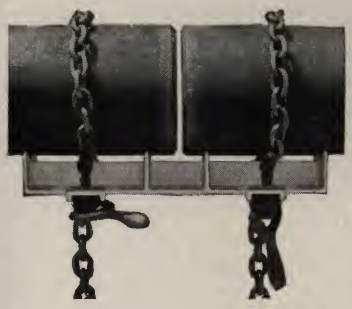


The Jewel Pipe Marker marks a perfect hole and saddle on any pipe.

This marker does away with all patterns for tee connections and any inexperienced operator can use it and get perfect results.

Size.....inches	2½ to 8	Up to 20
Each.....	$9.00	12.50

Jewel Pipe Clamps

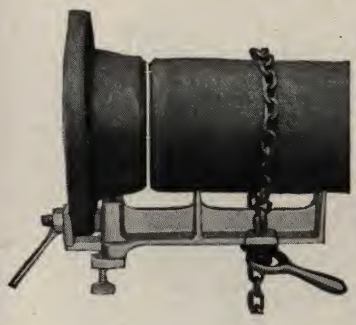


This clamp lines the pipe perfectly and holds it there until it is welded. Permits the economical erection of straight pipe lines in their permanent position, completed with the exception of the weld.

Rigidly constructed, resists strain, heat and abuse.

Size.....inches	½ to 8	8 to 16
Each.....	$9.50	24.00

Jewel Flange Clamps



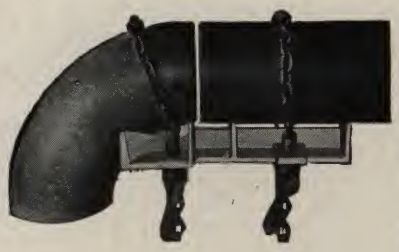
This clamp lines the face of welding neck flanges at perfect right angles to the pipe, squared both ways, and holds it there until it is tacked.

Light, fast and accurate; nothing to level and nothing to square.

Takes standard and extra heavy flanges.

Size.....inches	2½ to 8	8 to 16
Each.....	$17.50	36.00

Jewel Elbow Clamps



A simple, light and easily operated clamp that lines up elbow at perfect right angles to the pipe and holds them there until they are tacked.

Lines fittings on the bench, on the ground, or up on the line. One clamp takes all sizes from 2½ to 8 inches. Made in two styles for Series 1-R and 1½-R. State make of fittings when ordering.

Series.....	1½-R	1-R
Each.....	$15.00	15.00

Malleable Iron Ground Joint Unions

Bronze to Iron Seat

For 150 Pounds Steam Working Pressure

Malleable ends and octagon ring. Bronze-to-iron seat eliminates use of gaskets. New unions are not required when a joint is broken as the bronze-to-iron seat makes it possible to use them again.

Size In.	Black Each	Galv. Each
⅛	$.45	$.50
¼	.45	.50
⅜	.45	.50
½	.50	.55
¾	.60	.70
1	.80	.95
1¼	1.20	1.40
1½	1.55	1.80
2	2.30	2.60
2½	3.80	4.50
3	5.50	6.60

Extra Heavy Malleable Iron Unions

Navy Pattern

300 Pounds Steam Working Pressure

Has ground joint, octagon ends, and brass-to-iron seat. No gasket required. Seat is ground in so that a tight joint is obtained.

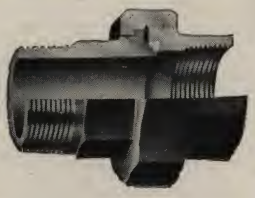
No. 98E

Size In.	Plain Each	Galv. Each
¼	$.45	$.50
⅜	.45	.50
½	.50	.55
¾	.60	.70
1	.80	.95
1¼	1.20	1.40
1½	1.55	1.80
2	2.30	2.60
2½	3.80	4.50
3	5.50	6.60
3½	8.00	10.00
4	11.00	13.50

No. 519½ Male and Female Malleable Unions

Bronze-to-Iron Ground Joint

For 300 Pounds Working Steam Pressure



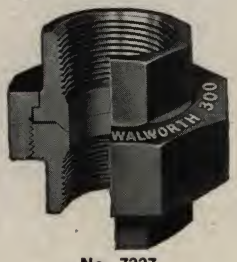
Size In.	Black Each	Galv. Each	Size In.	Black Each	Galv. Each
¼	$.56	$.67	1	$1.00	$1.40
⅜	.50	.70	1¼	1.50	2.10
½	.62	.87	1½	2.00	2.80
¾	.75	1.05	2	2.50	3.50

Walworth All-Iron Extra Heavy Malleable Unions

Octagon—Ground Joint

300 Pounds Working Steam Pressure at 550°F.

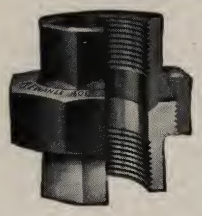
Suitable for high pressure service. Seats are ground to a ball joint and do away with the necessity of a gasket.



No. 7227

Size Inches	No. 7227 Female Each	No. 7627 Female Galvanized Each
¼	$.45	$.50
⅜	.45	.50
½	.50	.55
¾	.60	.70
1	.80	.95
1¼	1.20	1.40
1½	1.55	1.80
2	2.30	2.60
2½	3.80	4.50
3	5.50	6.60

Walworth Kewanee Unions



400-Pound Unions

400 Pounds Steam Service Pressure

Non-Shock Service Oil, Water, or Gas Pressures at Ordinary Air Temperatures:
¼ to 2 Inches—2000 Pounds
2½ and 3 Inches—1200 Pounds

Forged manganese bronze to forged steel ball joint. No gaskets required. Forged steel ring, forged bronze thread end, and forged steel swivel.

Size In.	No. 8201 Black Each	No. 8251 Galv. Each	Size In.	No. 8201 Black Each	No. 8251 Galv. Each
*¼	$.60	$.80	1¼	$1.30	$1.75
⅜	.60	.80	1½	1.55	2.10
½	.65	.90	2	2.50	3.40
¾	.80	1.10	2½	7.50	10.00
1	.95	1.30	3	10.50	14.00

*Made with round ends.

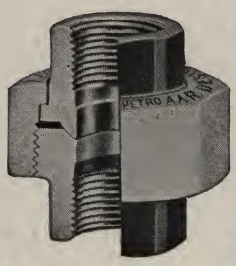
Petro Forged Steel Unions

Steel to Steel Seat

1150 Pounds Steam or Hot Oil Working Pressure at 500°F.
830 Pounds Steam or Hot Oil Working Pressure at 750°F.
630 Pounds Steam or Hot Oil Working Pressure at 850°F.
2000 Pounds Non-Shock Cold Water, Oil or Gas Working Pressure

Split die forgings of high quality high maganese open hearth forging steel. Not affected by vibration or shock.

The nut and nut threads are permanently lubricated, rust-proofed and spark-proofed with Udylite cadmium.



Size In.	Black Comp. Each	Black Ends Each	Udylited Comp. Each	Udylited Ends and Nuts Each	Width Across Nuts In.	Lgth. Over-all In.	Wt. Lb. per 100
⅛	$.40	$.14	$.50	$.17	1⅛	1½	21
¼	.40	.14	.50	.17	1⅜	1⅝	34
⅜	.50	.17	.60	.20	1 9/16	1 13/16	51
½	.60	.20	.75	.25	1 13/16	1 15/16	70
¾	.70	.24	.90	.30	2 3/16	2¼	120
1	.80	.27	1.05	.35	2 9/16	2 7/16	166
1¼	1.20	.40	1.50	.50	3 1/16	2 13/16	254
1½	1.60	.54	2.10	.70	3 7/16	3	332
2	2.30	.77	2.90	.97	4 1/16	3⅜	522
2½	4.50	1.50	5.25	1.75	4⅞	4	854
3	6.75	2.25	7.75	2.60	5¾	4 5/16	1260

Standard Malleable Iron Flange Unions

Gasket Type—Faced

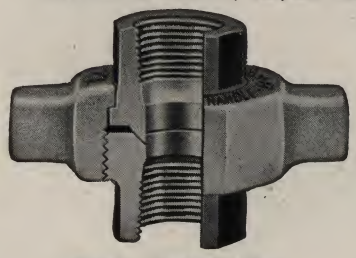
For 150 Lbs. Steam Working Pressure
For 225 Lbs. Cold Water, Oil, or Gas Non-Shock Work. Press.

Size In.	No. 158 Black Each	No. 159 Galv. Each	Diam. Flanges In.	No. Bolts	Size In.	No. 158 Black Each	No. 159 Galv. Each	Diam. Flanges In.	No. Bolts
¾	$1.40	$2.80	2⅞	3	3½	$5.25	$10.50	7½	4
1	1.60	3.20	3¼	4	4	6.00	12.00	7¾	5
1¼	2.00	4.00	3¾	4	5	8.00	16.00	9⅜	5
1½	2.50	5.00	4⅝	4	6	9.00	18.00	10⅜	6
2	3.00	6.00	5⅛	4	8	18.00	36.00	12¾	8
2½	3.50	7.00	5⅞	4	10	33.00	66.00	15½	10
3	4.40	8.80	6⅝	4	12	46.00	92.00	17⅞	12

We are as near as your nearest telephone.

Hi-Speed Forged Steel Handle-Bar Unions

V-Thread In Nut:
1150 Pounds Steam Working Pressure at 500°F.
2000 Pounds Oil, Gas, Air, and Water Working Pressure
Acme-Thread In Nut:
1150 Pounds Steam Working Pressure at 550°F.
3000 Pounds Cold Oil, Gas, and Water Working Pressure



With V-Threads in Nut

Recommended for steam, oil, gas, air, water, acidizing and cementing service.

Split die forgings of high quality, open hearth forging steel.

Nut and nut threads are permanently lubricated, rustproofed and sparkproofed with Udylite cadmium.

V-Thread in Nut

Pipe Size Inches	Steel to Steel Seats Black Ends Each	Steel to Steel Seats All Udylited Each	Bronze to Bronze Seats Black Ends Each	Bronze to Bronze Seats All Udylited Each	Handle Bar Nut Udylited Each	Length Overall Inches	Handle-Bars End to End Inches	Wt. Lb. per 100
⅜	$.61	$.64	$.64	$.68	$.33	1 13/16	2⅜	59
½	.73	.80	.79	.84	.41	1 15/16	3	83
¾	.83	.96	.91	1.00	.48	2¼	3½	141
1	.88	1.11	1.06	1.18	.57	2 7/16	4¼	197
1¼	1.35	1.60	1.52	1.67	.80	2 13/16	5	325
1½	1.78	2.24	2.18	2.33	1.12	3	5¾	390

Acme Thread in Nut

Pipe Size Inches	Steel to Steel Seats Each	Bronze to Bronze Seats Each	Steel Seat Hub Ends Each	Bronze Seat Hub Ends Each	Handle-Bar Nut Each	Length Overall Inches	Handle-Bars End to End Inches	Wt Lb. per 100
2	$2.52	$3.10	$.85	$1.06	$1.82	3⅜	6¾	650
2½	5.20	5.87	1.74	1.98	2.73	4	7¾	1063
3	7.87	8.71	2.63	2.90	3.94	4 5/16	8¾	1460
4	15.49	....	5.17	....	9.63	8	10½	3260

No. 330 Flagg Red Ring Malleable Iron Flange Unions

Ground Joint—Brass to Iron Seat
Renewable Brass Seat Ring

300 Pounds Working Steam Pressure
600 Pounds Cold Oil, Water, or Gas Working Pressure

Constructed in three sections, two threaded parts and a loose red ring or collar. After each threaded section has been screwed on end of pipe, the ring provides immediate adjustment of the bolt holes and application of the bolts. The opening through the seat is larger than the outside diameter of the pipe, so that no damage to the seat can result from protruding pipe.

The brass seat ring is screwed into position under pressure, not rolled in, assuring a perfect joint under expansion and contraction. It is replaceable.

Size In.	Black Each	Galv. Each	Diam. Flange In.	No. of Bolts	Wt. Lb. Each
1½	$3.20	$4.30	5⅛	4	6
2	4.00	5.40	5½	5	7⅝
2½	6.40	8.60	6½	4	11½
3	9.60	13.00	7 7/16	5	16
4	15.00	20.30	8 11/16	6	25½
5	20.00	27.00	10⅛	6	38
6	25.00	33.80	12⅜	8	63½
8	36.00	48.60	14 13/16	8	81
10	57.60	77.80	16⅝	12	139

Prices on iron to iron seat on application.

No. 223

Extra Heavy Malleable Iron Hydraulic Flange Unions

For Non-Shock Service Hydrostatic, Water, or Oil Pressure: ¼ to 2 In., 2000 Lbs.; 2½ to 4 In., 1000 Lbs.

Made with tongue and groove. Furnished with rubber gaskets.

Size In.	Each	O. D. In.	Bolts No.	Bolts Size, In.	Size In.	Each	O. D. In.	Bolts No.	Bolts Size, In.
¼	$1.35	3	2	½	1½	$2.25	5	4	9/16
⅜	1.35	3⅜	2	½	2	3.00	5¾	4	⅝
½	1.50	3½	2	½	2½	6.00	6 21/32	4	¾
¾	1.50	3¼	4	⅜	3	9.00	7 25/32	4	¾
1	1.50	3⅞	4	7/16	3½	11.50	8⅞	4	1⅛
1¼	1.75	4½	4	½	4	14.00	9⅝	4	1⅛

Malleable Iron Union Railroad Elbows

Brass to Iron Seat—Ground Joint

With Male Union

With Female Union

For 200 Lb. Steam Working Pres. 400 Lb. Water, Oil, Gas or Gasoline, Atmospheric Temperature, Non-Shock

Air Tested

Size In.	Black Each	Galv. Each
¼	$.60	$.80
⅜	.60	.80
½	.75	1.00
¾	.90	1.20
1	1.20	1.60
1¼	1.80	2.40
1½	2.40	3.20
2	3.00	4.00
2½	4.80	6.40
3	7.50	10.00

Malleable Iron Union Railroad Tees

Brass to Iron Seat—Ground Joint

With Male Union

With Female Union

For 200 Lb. Steam Working Pres. 400 Lb. Water, Oil, Gas or Gasoline, Atmospheric Temperature, Non-Shock

Air Tested

Size In.	Black Each	Galv. Each
¼	$.66	$.88
⅜	.66	.88
½	.82	1.10
¾	1.00	1.32
1	1.32	1.75
1¼	1.98	2.65
1½	2.64	3.50
2	3.30	4.40
2½	5.30	7.10
3	8.25	11.00

Long Screws

No. 741

Furnished with coupling and locknut faced.

Long screws longer than standard supplied on special order and charged as cut pipe, with threads, couplings, and locknuts extra.

In ordering, specify length of thread wanted.

Size Pipe Inches	Standard Length In.	Black Each	Galv. Each	Size Pipe Inches	Standard Length In.	Black Each	Galv. Each
¼	2½	$.30	$.35	1½	5½	$1.30	$1.60
⅜	3	.35	.40	2	6	1.70	2.10
½	3½	.40	.50	2½	7	2.70	3.10
¾	4	.55	.66	3	8	3.70	4.70
1	4½	.75	1.00	3½	8½	5.40	6.50
1¼	5	1.00	1.25	4	9	6.60	7.75

Malleable Iron Circulating Boiler Union Elbows

New Style

No 231

Size Inches	Galvanized Each	Weight Pounds Each
½x½x1	$.60	1.1
¾x½x1	.75	1.1
¾x¾x1	.75	1.05

Malleable Circulating Boiler Union Couplings

New Style

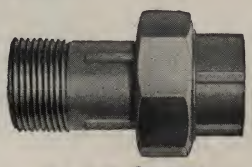
No. 230

Size Inches	Galvanized Each	Weight Each Pounds
½x½x1	$.60	.97
¾x½x1	.75	.90
¾x¾x1	.75	.90

Trenton Brass Boiler Couplings

Malleable Pattern

No. C40½, Bent



No. C40, Straight

Spud	Tail Piece	Spud Tapping for Tube	No. C40½ Bent Each	No. C40 Straight Each
1″ I.P.M. x	½″ I.P.F. x	½″ I.P.F.	.....	.....
1″ I.P.M. x	¾″ I.P.F. x	½″ I.P.F.	.....	.....
1″ I.P.M. x	½″ I.P.F. x	¾″ I.P.F.	.....	.....
1″ I.P.M. x	¾″ I.P.F. x	¾″ I.P.F.	.....	.....

To insure getting correct size couplings, specify sizes in the order shown above.

Brass Range Boiler Couplings and Spuds

Couplings

No. 4545

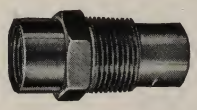
No. 4546

Straight and bent couplings have ground joint union.

Thread on Spud.....inches	1 I.P.M.	1 I.P.M.
Union Tail-Piece.....inches	½ I.P.F.	¾ I.P.F.
No. 4545.....each	.....	.....
No. 4546.....each	.....	.....

Spud tapped ¾-inch i.p.t. inside for drop-pipe.

No. 4547 Boiler Spuds



Thread on Spud.....inches	1 I.P.M.	*¾ I.P.F.
No. 4547.....each	.....	.....

*Spud tapped ¾-inch i.p.t. inside for drop pipe.

Specialties

- It is not practical for us to list many items used for special service.
- Let us help you with problems where special material is required.

Seamless Brass and Copper Pipe

Iron Pipe Sizes

Brass pipe does not rust, therefore it has a long life. It insures a full flow of clear water.

Variations from the weights given below must be expected in practice. The weights are based on the following densities: yellow brass, .307 pounds per cubic inch; red brass, .316 pounds per cubic inch; copper, .323 pounds per cubic inch.

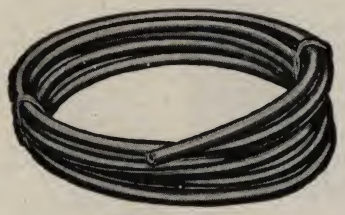
Iron Pipe Size Inches	Actual Diameter Outside Inches	Actual Diameter Inside Inches	Wall Thickness Inches	Weight, Pounds per Foot: 67 Brass	85 Red Brass	Copper
Standard						
1/8	.405	.281	.0620	.246	.253	.259
1/4	.540	.375	.0825	.437	.447	.457
3/8	.675	.494	.0905	.612	.627	.641
1/2	.840	.625	.1075	.911	.934	.955
3/4	1.050	.822	.1140	1.24	1.27	1.30
1	1.315	1.062	.1265	1.74	1.78	1.82
1 1/4	1.660	1.368	.1460	2.56	2.63	2.69
1 1/2	1.900	1.600	.1500	3.04	3.13	3.20
2	2.375	2.062	.1565	4.02	4.12	4.22
2 1/2	2.875	2.500	.1875	5.83	5.99	6.12
3	3.500	3.062	.2190	8.31	8.56	8.75
3 1/2	4.000	3.500	.2500	10.85	11.2	11.4
4	4.500	4.000	.2500	12.29	12.7	12.9
4 1/2	5.000	4.500	.2500	13.74	14.1	14.5
5	5.563	5.063	.2500	15.40	15.8	16.2
6	6.625	6.125	.2500	18.44	19.0	19.4
7	7.625	7.062	.2815	23.92	24.6	25.1
8	8.625	8.000	.3125	30.05	30.9	31.6
9	9.625	8.937	.3440	36.94	38.03	38.83
10	10.750	10.019	.3655	43.91	45.20	46.22
11	11.750	11.000	.3750	49.37	50.81	51.94
12	12.750	12.000	.3750	53.71	55.29	56.51
Extra Strong						
1/8	.405	.205	.100	.353	.363	.371
1/4	.540	.294	.123	.593	.611	.625
3/8	.675	.421	.127	.805	.829	.847
1/2	.840	.542	.149	1.19	1.23	1.25
3/4	1.050	.736	.157	1.62	1.67	1.71
1	1.315	.951	.182	2.39	2.46	2.51
1 1/4	1.660	1.272	.194	3.30	3.39	3.46
1 1/2	1.900	1.494	.203	3.99	4.10	4.19
2	2.375	1.933	.221	5.51	5.67	5.80
2 1/2	2.875	2.315	.280	8.41	8.66	8.85
3	3.500	2.892	.304	11.24	11.6	11.8
3 1/2	4.000	3.358	.321	13.67	14.1	14.4
4	4.500	3.818	.341	16.41	16.9	17.3
4 1/2	5.000	4.250	.375	20.07	20.7	21.1
5	5.563	4.813	.375	22.52	23.2	23.7
6	6.625	5.751	.437	31.32	32.2	32.9
7	7.625	6.625	.500	41.23	42.4	43.4
8	8.625	7.625	.500	47.02	48.4	49.5
9	9.625	8.625	.500	52.81	54.34	55.56
10	10.750	9.750	.500	59.32	61.05	62.40

Extras for Finishings

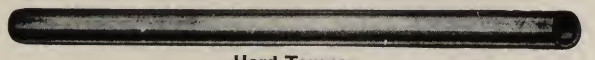
Nominal Sizes Inches	Tinning Per Lineal Foot	Polishing Per Lineal Foot	Nickel Plating Per Lineal Foot	Chromium Plating Per Lineal Foot	Threading Per End
1/8	$.05	$.07	$.09	$.15	$.11
1/4	.07 1/2	.07	.10 1/2	.16	.11
3/8	.09 1/2	.07 1/2	.11 1/2	.20	.11
1/2	.12 1/2	.08	.12 1/2	.23	.11
3/4	.12 1/2	.08	.12 1/2	.26	.11
1	.12 1/2	.09	.14	.31	.11
1 1/4	.15	.10 1/2	.16	.41	.15
1 1/2	.16	.10 1/2	.19	.61	.19
2	.22 1/2	.15	.21	.79	.26
2 1/2	.34	.15	.24	.90	.38
3	.46	.19	.34	1.09	.56
3 1/2	.59	.22 1/2	.46	1.31	.75
4	.71	.26	.59	1.44	.75
4 1/2	.77	.30	.71	1.51	.94
5	.84	.....	.83	....	1.13
6	.90	.....	1.05	....	1.69

Stock lengths are all exactly 12 feet.

Copper Water Tube



Soft Temper



Hard Temper

Type K is furnished in both hard and soft tempers and is used for underground services, for general plumbing purposes with severe conditions. Hard temper, 400 pounds working pressure, steam (saturated) up to 65 pounds gauge or 310°F. Soft temper, 250 pounds working pressure, steam (saturated) up to 65 pounds gauge or 310°F. Furnished in hard or soft in straight 20-foot lengths; soft in 30, 45 and 60-foot coils. Coiling over 1 1/4-inch size not recommended.

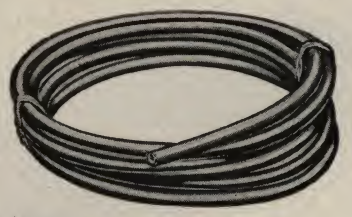
Type L is also made in hard and soft tempers and is used for general plumbing purposes. Hard temper, 250 pounds working pressure, steam (saturated) up to 65 pounds gauge or 310°F. Soft temper, 150 pounds working pressure, steam (saturated) up to 65 pounds gauge or 310°F. Furnished in hard or soft in straight 20-foot lengths; soft in 30, 45 and 60-foot coils. Coiling over 1 1/4-inch size not recommended.

Type M is furnished in hard temper only, 250 pounds working pressure, and is used for general plumbing and heating purposes with soldered fittings only and with normal water conditions. Furnished in straight 20-foot lengths.

Nom. Size In.	O.D. In.	Type K Per Foot	Type K Thickness Wall In.	Type K Wt. Lb. per Ft.	Type L Per Foot	Type L Thickness Wall In.	Type L Wt. Lb. per Ft.	Type M Per Foot	Type M Thickness Wall In.	Type M Wt. Lb. per Ft.
1/4	3/8	$0.06 1/2	.032	.134	.....	....	.....	$0.05 1/2	.025	.107
3/8	1/2	.12	.049	.269	$0.09	.035	.198	.07	.025	.145
1/2	5/8	.14 1/2	.049	.344	.13	.040	.285	.09	.028	.209
5/8	3/4	*.17 1/2	.049	.418	*.15 1/2	.042	.362	...	....	....
3/4	7/8	.24 1/2	.065	.641	.18 1/2	.045	.455	.14	.032	.328
1	1 1/8	.30	.065	.839	.25	.050	.655	.18 1/2	.035	.465
1 1/4	1 3/8	.37	.065	1.04	.33 1/2	.055	.884	.26 1/2	.042	.682
1 1/2	1 5/8	.47	.072	1.36	.40 1/2	.060	1.14	.35	.049	.94
2	2 1/8	.69	.083	2.06	.62	.070	1.75	.55	.058	1.46
2 1/2	2 5/8	.95	.095	2.93	.88	.080	2.48	.77	.065	2.03
3	3 1/8	1.29	.109	4.00	1.16	.090	3.33	.99	.072	2.68
3 1/2	3 5/8	1.66	.120	5.12	1.54	.100	4.29	1.33	.083	3.58
4	4 1/8	2.20	.134	6.51	1.93	.110	5.38	1.74	.095	4.66
5	5 1/8	3.49	.160	9.67	2.89	.125	7.61	2.57	.109	6.66
6	6 1/8	5.33	.192	13.87	4.01	.140	10.20	3.60	.122	8.92
8	8 1/8	10.55	.271	25.90	*7.86	.200	19.30	6.78	.170	16.50
10	10 1/8	18.75	.338	40.30	*13.98	.250	30.10	11.91	.212	25.60
12	12 1/8	30.56	.405	57.80	*21.35	.280	40.40	19.41	.254	36.70

*Hard temper only.

Copper Tubing



Round, soft temper.

It is soft enough to coil without kinking and is made especially for gasoline lines, oiling systems, etc.

1/8 -In. O.D.....per ft. ....
3/16-In. O.D.....per ft. ....
1/4 -In. O.D.....per ft. ....
5/16-In. O.D.....per ft. ....
3/8 -In. O.D.....per ft. ....
1/2-In. O.D.....per ft. ....
5/8-In. O.D.....per ft. ....
3/4-In. O.D.....per ft. ....
1 -In. O.D.....per ft. ....
.....

Seamless Copper Refrigerator Tubing

A highly ductile and flexible tubing, chemically dry and clean. It can be readily bent, coiled and shaped for any installation. The ductility allows the ends to be flanged easily, assuring a tight-fitting connection.

Cast in a round billet form from copper. Treated to produce a tube free from copper oxide. Pierced and drawn down to seamless refrigerator tubing of a specific size.

Dehydrated, in either plain copper or tin-coated finish.

Tested for hydrostatic pressure at 1000 pounds per square inch. Wall thickness, .035 inch.

Sizes 1/8, 1/4, 5/16, 3/8, 1/2, 5/8 and 3/4 inch.

Prices and further information upon application.

No. 20 Gauge Brass Tubing

Chromium Plated

Outside Diameter....inches	1 1/4	1 3/8	1 1/2	1 3/4	2
Thickness..... decimal parts of an inch	.035	.035	.035	.035	.035
Wt. per Lineal Ft....pounds	.492	.543	.593	.694	.796

Standard Brass Unions

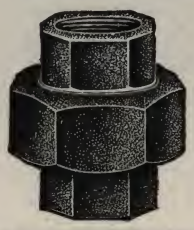
Ground Joints

For 125 Pounds Steam Working Pressure

No. 655

Size In.	Rough Each	Semi-Fin. Each	Polished Each	Chromium Plated Each
1/8	....	$.50	$.65	$.80
1/4	$.40	.50	.65	.80
3/8	.40	.50	.65	.80
1/2	.48	.60	.78	.96
3/4	.66	.82	1.07	1.32
1	.88	1.10	1.43	1.76
1 1/4	1.28	1.60	2.08	2.56
1 1/2	1.52	1.90	2.47	3.05
2	2.28	2.85	3.70	4.60
2 1/2	4.15	5.20	6.75	8.30
3	6.40	8.00	10.40	12.80

Prices for acid-resisting metal upon application.



Extra Heavy Brass Unions

Ground Joint Pattern

For 300 Pounds Saturated Steam Pressure

Size In.	Rough Each	Size In.	Rough Each
1/4	$1.10	1 1/4	$3.40
3/8	1.10	1 1/2	4.20
1/2	1.25	2	6.20
3/4	1.75	2 1/2	12.00
1	2.40	3	18.00

MATERIAL NOT LISTED

We can furnish practically everything used in mill, factory, or shop.

Please send us all of your inquiries.

Standard Rough Brass Screwed Fittings

Flat Band Pattern

125 Pounds Service Steam Pressure
175 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure

90° Elbow

45° Elbow

Nickel-plated fittings furnished at an advance of 133 1/3% over rough prices; tinned fittings at 100% over rough fittings.

Tee

Cross

Size.....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8
Bushings Hex. (Reducing 1 or 2 sizes).....ea.	...	$.08	$.08	$.10	$.14	$.21	$.35	$.45	$.65	$1.30	$2.00	$3.00	$4.00	$8.00	$12.00	$27.00
Bushings Hex. (Red. 3 or more sizes).....ea.	...	...	...	.12	.17	.25	.42	.54	.78	1.56	2.40	3.60	4.80	9.60	14.40	33.00
Bushings Face (Reducing 1 or 2 sizes).....ea.	...	.19	.19	.22	.30	.45	.60	.76	.96	1.75	3.00	3.75	5.00	....	....	....
Bushings Face (Red. 3 or more sizes).....ea.	...	...	...	.26	.36	.54	.72	.92	1.15	2.10	3.60	4.50	6.00	....	....	....
Caps.....ea.	$.11	.11	.11	.13	.18	.27	.45	.57	.95	1.60	2.30	3.40	4.40	8.50	14.00	$32.00
Couplings Right Hand.....ea.	.11	.11	.11	.14	.21	.36	.58	.70	1.16	1.75	2.50	3.60	4.60	10.00	14.00	32.00
Couplings, Right and Left.....ea.	.29	.29	.29	.34	.40	.60	.80	.90	1.50	2.25	3.30	....	....	....	....	....
Crosses.....ea.	.32	.32	.32	.42	.58	.79	1.26	1.63	3.00	5.60	9.50	13.00	17.00	35.00	50.00	125.00
Crosses Reducing.....ea.	...	.40	.40	.53	.72	1.00	1.60	2.05	3.75	7.00	11.90	16.25	21.25	44.00	62.50	156.00
Crossovers.....ea.	...	...	...	.60	.80	...	...	...	...	...	...	....	....	....	....	....
Drop Elbows.....ea.	...	...	.35	.40	.55	.70	...	...	...	...	....	....	....	....	....	....
Drop Tees.....ea.	...	...	.40	.50	.70	.95	...	...	...	...	....	....	....	....	....	....
Elbows 90°.....ea.	.11	.11	.11	.14	.21	.36	.59	.75	1.20	2.45	3.63	5.45	7.20	14.00	21.50	49.00
Elbows Reducing.....ea.	...	.15	.15	.18	.25	.45	.70	.90	1.55	2.75	4.35	6.25	8.00	16.75	25.00	57.00
Elbows Right and Left.....ea.	...	.40	.40	.55	.70	1.00	1.20	1.55	2.30	...	....	....	....	....	....	....
Elbows 45°.....ea.	.13	.13	.13	.15	.23	.40	.65	.83	1.32	2.68	3.98	6.00	7.90	15.50	23.75	54.00
Elbows Side Outlet.....ea.	...	.72	.72	1.00	1.30	1.85	2.50	3.00	4.75	7.20	10.75	....	....	....	....	....
Elbows 90° Street.....ea.	.17	.17	.17	.22	.30	.50	.80	1.05	1.75	3.25	5.50	8.16	10.50	....	....	....
Elbows 45° Street.....ea.	.17	.17	.17	.22	.30	.50	.80	1.05	1.75	...	....	....	....	....	....	....
Extension pieces.....ea.	...	...	.25	.36	.50	.90	1.40	1.75	3.00	...	....	....	.	....	....	....
Hexagon Locknuts.....ea.	.06	.06	.06	.10	.12	.18	.27	.35	.55	1.00	1.55	2.30	3.00	5.00	8.00	20.00
Plugs Square Head Coved.....ea.	.11	.11	.11	.13	.15	.20	.30	.38	.63	1.00	1.60	2.25	3.00	5.00	8.00	20.00
Plugs Solid.....ea.	.11	.11	.11	.13	.18	.27	.45	.57	.95	1.65	2.70	4.50	6.50	11.00	18.00	35.00
Plugs Countersunk.....ea.	...	...	...	.13	.18	.27	.45	.57	.95	1.65	2.70	4.50	6.50	....	....	....
Reducers (Reducing 1 or 2 sizes).....ea.	...	.12	.12	.16	.23	.40	.64	.77	1.28	1.95	2.75	4.00	5.00	11.00	15.40	35.00
Reducers (Red. 3 or more sizes).....ea.	...	...	...	.17	.25	.44	.70	.84	1.40	2.10	3.00	4.30	5.50	12.00	17.00	38.50
Return Bends Close Pattern R.....ea.	...	...	...	.35	.55	.90	1.25	1.70	3.25	...	....	....	....	....	....	....
Return Bends Close Pattern R. & L.....ea.	...	...	...	.85	1.05	1.50	1.80	2.40	4.00	...	....	....	....	....	....	....
Return Bends Open Pattern R.....ea.	...	...	...	.45	.75	1.20	1.70	2.30	4.35	7.00	9.00	....	....	....	....	....
Return Bends Open Pattern R. & L.....ea.	...	...	...	1.00	1.25	1.80	2.30	3.00	5.10	8.50	12.00	....	....	....	....	....
Tees.....ea.	.17	.17	.17	.22	.30	.50	.80	1.05	1.75	3.25	5.00	8.15	10.50	21.00	30.00	75.00
Tees Reducing (Reducing 1 Opening).....ea.	...	.20	.20	.26	.36	.60	.95	1.25	2.10	3.90	6.00	9.75	12.60	25.00	36.00	90.00
Tees Reducing (Reducing 2 Openings).....ea.	...	.22	.22	.29	.39	.65	1.05	1.40	2.30	4.25	6.50	10.60	13.65	27.30	39.00	97.50
Tees, Service.....ea.	...	...	.27	.36	.50	.85	1.25	1.67	2.75	...	....	....	....	....	....	....
Tees Four Way.....ea.	...	.80	.80	1.10	1.46	2.05	2.75	3.30	5.25	...	....	....	....	....	....	....
Y Bends 45°.....ea.	...	...	.40	.45	.60	1.00	1.60	2.10	3.50	6.50	10.00	....	21.00	....	....	....

Standard Polished Brass Screwed Fittings

Flat Band Pattern

125 Pounds Service Steam Pressure
175 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure

90° Elbow

45° Elbow

Tee

Cross

Size ... inches	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8
Bushings Hex. (Reducing 1 or 2 sizes) ... ea.	...	$.16	$.16	$.20	$.28	$.42	$.70	$.90	$1.30	$2.60	$4.00	$6.00	$8.00	$16.00	$24.00	$34.00
Bushings Hex. (Red. 3 or more sizes) ... ea.	...	..	..	.24	.34	.50	.84	1.08	1.55	3.10	4.80	7.20	9.60	19.20	28.80	66.00
Caps ... ea.	$.22	.22	.22	.26	.36	.54	.90	1.15	1.90	3.20	4.60	6.80	8.80	17.00	28.00	64.00
Couplings Right Hand ... ea.	.22	.22	.22	.28	.42	.72	1.15	1.40	2.30	3.50	5.00	7.20	9.20	20.00	28.00	64.00
Couplings, Right and Left ... ea.	.40	.40	.40	.48	.61	.96	1.40	1.60	2.65	4.00	5.80	....	....	....	....	....
Crosses ... ea.	.64	.64	.64	.84	1.15	1.60	2.50	3.25	6.00	11.20	19.00	26.00	34.00	70.00	100.00	250.00
Crosses Reducing ... ea.	...	.80	.80	1.05	1.45	2.00	3.20	4.10	7.50	14.00	23.80	32.50	42.50	88.00	125.00	312.00
Crossovers ... ea.	...	..	..	1.20	1.60	...	...	...	...	....	....	....	....	....	....	....
Drop Elbows ... ea.	...	..	.70	.80	1.10	1.40	...	...	...	....	....	....	....	....	....	....
Drop Tees ... ea.	...	..	.80	1.00	1.40	1.90	...	...	...	....	....	....	....	....	....	....
Elbows 90° ... ea.	.22	.22	.22	.28	.42	.72	1.20	1.50	2.40	4.90	7.25	10.90	14.40	28.00	43.00	98.00
Elbows Reducing ... ea.	...	.30	.30	.36	.50	.90	1.40	1.80	3.10	5.50	8.70	12.50	16.00	33.50	50.00	114.00
Elbows Right and Left ... ea.	...	.51	.51	.69	.91	1.35	1.80	2.30	3.50	....	....	....	....	....	....	....
Elbows 45° ... ea.	.26	.26	.26	.30	.46	.80	1.30	1.65	2.65	5.35	7.95	12.00	15.80	31.00	47.50	108.00
Elbows Side Outlet ... ea.	...	1.45	1.45	2.00	2.60	3.70	5.00	6.00	9.50	14.40	21.50	....	....	....	....	....
Elbows 90° Street ... ea.	.34	.34	.34	.44	.60	1.00	1.60	2.10	3.50	6.50	11.00	16.30	21.00	....	....	....
Elbows 45° Street ... ea.	.34	.34	.34	.44	.60	1.00	1.60	2.10	3.50	....	....	....	....	....	....	....
Extension pieces ... ea.	...	...	.50	.72	1.00	1.80	2.80	3.50	6.00	....	....	....	....	....	....	....
Hexagon Locknuts ... ea.	.12	.12	.12	.20	.24	.36	.54	.70	1.10	2.00	3.10	4.60	6.00	10.00	16.00	40.00
Plugs Square Head ... ea.	.22	.22	.22	.26	.30	.40	.60	.76	1.25	2.00	3.20	4.50	6.00	10.00	16.00	40.00
Plugs Solid ... ea.	.22	.22	.22	.26	.36	.54	.90	1.15	1.90	3.30	5.40	9.00	13.00	22.00	36.00	70.00
Plugs Countersunk ... ea.	...	...	...	.26	.36	.54	.90	1.15	1.90	3.30	5.40	9.00	13.00	....	....	....
Reducers (Reducing 1 or 2 sizes) ... ea.	...	.24	.24	.32	.46	.80	1.30	1.55	2.55	3.90	5.50	8.00	10.00	22.00	30.80	70.00
Reducers (Red. 3 or more sizes) ... ea.	...	...	...	.34	.50	.88	1.40	1.70	2.80	4.20	6.00	8.60	11.00	24.00	34.00	77.00
Return Bends Close Pattern R ... ea.	...	...	...	.70	1.10	1.80	2.50	3.40	6.50	....	....	....	....	....	....	....
Return Bends Close Pattern R. & L ... ea.	...	...	...	1.20	1.60	2.40	3.05	4.10	7.25	....	....	....	....	....	....	....
Return Bends Open Pattern R ... ea.	...	...	...	.90	1.50	2.40	3.40	4.60	8.70	14.00	18.00	....	....	....	....	....
Return Bends Open Pattern R. & L ... ea.	...	...	...	1.45	2.00	3.00	4.00	5.30	9.45	15.50	21.00	....	....	....	....	....
Tees ... ea.	.34	.34	.34	.44	.60	1.00	1.60	2.10	3.50	6.50	10.00	16.30	21.00	42.00	60.00	150.00
Tees Reducing (Reducing 1 Opening) ... ea.	...	.40	.40	.52	.72	1.20	1.90	2.50	4.20	7.80	12.00	19.50	25.20	50.00	72.00	180.00
Rees Reducing (Reducing 2 Openings) ... ea.	...	.44	.44	.58	.78	1.30	2.10	2.80	4.60	8.50	13.00	21.20	27.30	54.60	78.00	195.00
Tees Service ... ea.	...	...	.54	.72	1.00	1.70	2.50	3.35	5.50	....	....	....	....	....	....	....
Tees Four Way ... ea.	...	1.60	1.60	2.20	2.92	4.10	5.50	6.60	10.50	....	....	....	....	....	....	....
Y Bends 45° ... ea.	...	...	.80	.90	1.20	2.00	3.20	4.20	7.00	13.00	20.00	....	42.00	....	....	....

Chromium Plated Brass Fittings

Flat Band—Iron Pipe Size

125 Pounds Service Steam Pressure

175 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure

90° Elbows

Tee

Cross

Y Bend

Size ... inches	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8
Bushings, Hex. (Reducing 1 or 2 Sizes) ... ea.	....	$.24	$.24	$.30	$.42	$.63	$1.05	$1.35	$1.95	$3.90	$6.00	$9.00	$12.00	$24.00	$36.00	$81.00
Bushings, Hex. (Red. 3 or more sizes) ... ea.	....	...	...	.36	.51	.75	1.26	1.62	2.34	4.70	7.20	10.80	14.40	29.00	43.00	99.00
Caps ... ea.	$.33	.33	.33	.39	.54	.81	1.35	1.70	2.85	4.80	6.90	10.20	13.20	25.50	42.00	$96.00
Couplings, Right Hand ... ea.	.33	.33	.33	.42	.63	1.08	1.74	2.10	3.50	5.25	7.50	10.80	13.80	30.00	42.00	96.00
Couplings, Right & Left ... ea.	.51	.51	.51	.62	.82	1.32	1.96	2.30	3.84	5.75	8.30	....	....	....	....	....
Crosses ... ea.	.96	.96	.96	1.25	1.75	2.35	3.80	4.90	9.00	16.80	28.50	39.00	51.00	105.00	150.00	375.00
Crosses, Reducing ... ea.	...	1.20	1.20	1.60	2.15	3.00	4.80	6.15	11.25	21.00	35.70	48.75	63.75	132.00	187.50	468.00
Crossovers ... ea.	...	....	....	1.80	2.40	....	....	....	....	....	....	....	....	....	....	....
Drop Elbows ... ea.	...	....	1.05	1.20	1.65	2.10	....	....	....	....	....	....	....	....	....	....
Drop Tees ... ea.	...	....	1.20	1.50	2.10	2.85	....	....	....	....	....	....	....	....	....	....
Elbows, 90° ... ea.	.33	.33	.33	.42	.63	1.08	1.75	2.25	3.60	7.35	10.90	16.35	21.60	42.00	64.50	147.00
Elbows, Reducing ... ea.	...	.45	.45	.54	.75	1.35	2.10	2.70	4.65	8.25	13.00	18.75	24.00	50.00	75.00	171.00
Elbows, Right and Left ... ea.	...	.62	.62	.83	1.12	1.72	2.35	3.05	4.70	....	....	....	....	....	....	....
Elbows, 45° ... ea.	.39	.39	.39	.45	.69	1.20	1.95	2.50	3.95	8.05	12.00	18.00	23.70	46.50	71.25	162.00
Elbows, Side Outlet ... ea.	...	2.16	2.16	3.00	3.90	5.55	7.50	9.00	14.25	21.60	32.25	....	....	....	....	....
Elbows, 90° Street ... ea.	.51	.51	.51	.66	.90	1.50	2.40	3.15	5.25	9.75	16.50	24.50	31.50	....	....	....
Elbows, 45° Street ... ea.	.51	.51	.51	.66	.90	1.50	2.40	3.15	5.25	....	....	....	....	....	....	....
Extension Pieces ... ea.	...	...	.75	1.08	1.50	2.70	4.20	5.25	9.00	....	....	....	....	....	....	....
Hexagon Locknuts ... ea.	.18	.18	.18	.30	.36	.54	.81	1.05	1.65	3.00	4.65	6.90	9.00	15.00	24.00	60.00
Plugs, Square Head ... ea.	.33	.33	.33	.39	.45	.60	.90	1.14	1.90	3.00	4.80	6.75	9.00	15.00	24.00	60.00
Plugs, Solid ... ea.	.33	.33	.33	.39	.54	.81	1.35	1.70	2.85	4.95	8.10	13.50	19.50	33.00	54.00	105.00
Plugs, Countersunk ... ea.	...	...	...	.39	.54	.81	1.35	1.70	2.85	4.95	8.10	13.50	19.50	....	....	....
Reducers (Red. 1 or 2 Sizes) ... ea.	...	.36	.36	.48	.69	1.20	1.92	2.30	3.85	5.85	8.25	12.00	15.00	33.00	46.00	105.00
Reducers (Red. 3 or more Sizes) ... ea.	...	...	...	.51	.75	1.32	2.10	2.50	4.20	6.30	9.00	12.90	16.50	36.00	51.00	115.50
Return Bends, Close Pattern, Right Hand ... ea.	...	...	...	1.05	1.65	2.70	3.75	5.10	9.75	....	....	....	....	....	....	....
Return Bends, Close Pattern, Right & Left ... ea.	...	...	...	1.55	2.15	3.30	4.30	5.80	10.50	....	....	....	....	....	....	....
Return Bends, Open Pattern, Right Hand ... ea.	...	...	...	1.35	2.25	3.60	5.10	6.90	13.00	21.00	27.00	....	....	....	....	....
Return Bends, Open Pattern, Right & Left ... ea.	...	...	...	1.90	2.75	4.20	5.70	7.60	13.75	22.50	30.00	....	....	....	....	....
Tees ... ea.	.51	.51	.51	.66	.90	1.50	2.40	3.15	5.25	9.75	15.00	24.50	31.50	63.00	90.00	225.00
Tees, Reducing (Reducing 1 Opening) ... ea.	...	.60	.60	.78	1.08	1.80	2.85	3.75	6.30	11.70	18.00	29.25	37.80	75.00	108.00	270.00
Tees, Reducing (Reducing 2 Openings) ... ea.	...	.66	.66	.87	1.17	1.95	3.15	4.20	6.90	12.75	19.50	31.80	41.00	82.00	117.00	292.50
Tees Service ... ea.	...	...	.81	1.08	1.50	2.55	3.75	5.00	8.25	....	....	....	....	....	....	....
Tees Four Way ... ea.	..	2.40	2.40	3.30	4.40	6.15	8.25	9.90	15.75	....	....	....	....	....	....	....
Y Bends 45° ... ea.	...	...	1.20	1.35	1.80	3.00	4.80	6.30	10.50	19.50	30.00	....	63.00	....	....	....

Extra Heavy Brass Fittings

Elbow

Flat Band—Iron Pipe Size

250 Pounds Service Steam Pressure

400 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure

Tee

Rough

Size.....inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8
Caps.....ea.	...	...	....	....	....	....	....	$2.50	$3.90	$5.60	$7.30	$9.60	$15.50	$20.00	$37.50
Couplings, R.H.....ea.	$.23	$.23	$.46	$.54	$.80	$1.10	$1.70	2.40	3.45	4.30	6.70	8.50	16.30	30.50	65.00
Couplings, Reducing, 2 Sizes.....ea.	...	...	....	.56	.84	1.15	1.75	2.55	3.65	4.55	7.10	8.90	17.30	32.00	68.00
Couplings, Reducing more than 2.....ea.	...	...	....	.58	.88	1.20	1.85	2.65	3.80	4.80	7.40	9.40	18.30	33.50	71.50
Crosses.....ea.	.56	.56	.90	1.15	1.60	2.30	3.10	5.50	8.50	13.30	18.00	21.00	47.00	57.00	142.00
Crosses, Reducing....ea.	...	...	....	1.30	1.80	2.65	3.50	6.30	9.90	15.70	21.25	25.25	56.00	69.50	175.00
Elbows, 90°.....ea.	.22	.22	.37	.50	.78	1.15	1.50	2.40	5.70	7.50	10.20	14.50	20.00	33.50	82.50
Elbows, Reducing....ea.	...	...	.49	.53	.99	1.25	1.65	2.75	6.00	8.20	11.00	15.30	22.75	37.00	90.50
Elbows, Right & Left.ea.	.51	.51	.78	.99	1.40	1.75	2.30	3.50	8.00	10.90	.....	.....	.....	.....	.....
Elbows, 45°.....ea.	.24	.24	.38	.52	.82	1.20	1.60	2.50	5.90	7.90	10.80	15.20	21.50	35.75	87.50
Return Bends, Close R.H .ea.	...	...	1.15	1.30	1.90	3.40	3.75	5.40	8.60	11.70	.....	21.00	.....	.....	.....
Return Bends, Close R.&L.ea.	...	...	1.65	1.85	2.60	4.20	4.70	6.50	.....	.....	.....	.....	.....	.....	.....
Return Bends, Open R.H .ea.	...	...	....	1.70	2.55	4.20	5.00	6.00	11.00	15.50	.....	27.00	.....	.....	.....
Return Bends, Open R.&L.ea.	...	...	....	2.30	3.35	5.10	6.10	7.20	12.50	18.00	.....	.....	.....	.....	.....
Tees.....ea.	.38	.38	.52	.76	1.10	1.75	2.15	4.15	6.20	9.80	15.40	17.30	34.25	51.00	128.00
Tees, Red., 1 opening.ea.	...	...	.56	.82	1.20	1.90	2.35	4.50	6.90	10.80	17.00	19.40	38.25	57.00	143.00
Tees, Red., 2 open....ea.	...	...	.59	.85	1.25	2.00	2.50	4.70	7.20	11.30	17.90	20.50	40.50	60.00	150.00
Y Branches, 45°.....ea.	...	...	1.00	1.26	1.94	3.00	4.30	8.25	11.60	19.60	24.00	33.00	52.00	67.00	.....

Brass Flange Unions

With Steel Bolts

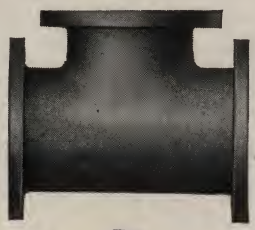
Standard—150 Pounds Service Steam Pressure
225 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure

Extra Heavy—250 Pounds Service Steam Pressure at 500°F.
375 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure

Size.....inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8
Standard.....ea.	$4.00	4.80	5.40	7.00	8.00	10.00	12.00	14.00	17.00	20.00	35.00	45.00	62.00
Extra Heavy....ea.	....	$7.75	8.75	10.20	12.75	16.00	19.25	22.50	27.00	32.00	56.00	72.00	100.00

Brass Flanged Fittings

90° Elbow



Tee

Standard Brass Flanged Fittings
For 150 Pounds Steam Working Pressure

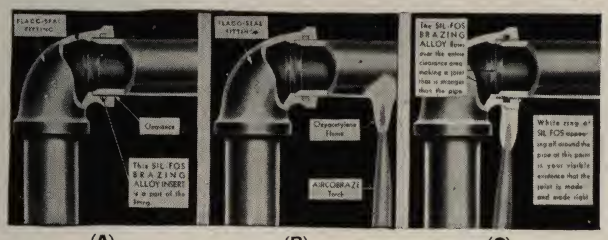
Size Inches	Faced and Drilled: Elbows 90° Each	Elbows 45° Each	Tees Each	Crosses Each	Comp. Flanges Each	Elbows, Tees and Crosses: Face to Face, In.	Center to Face In.	45° Elbows Center to Face	Diam. Flange In.	Thickness Flanges In.	No. of Bolts	Size Bolts In.	Bolt Circle In.
1 1/4	$16.00	$17.00	$24.00	$32.00	$3.50	7 1/2	3 3/4	2	4 5/8	13/32	4	1/2	3 1/2
1 1/2	21.00	23.00	31.50	42.00	4.50	8	4	2 1/4	5	7/16	4	1/2	3 7/8
2	26.00	28.50	39.00	52.00	5.50	9	4 1/2	2 1/2	6	1/2	4	5/8	4 3/4
2 1/2	35.00	38.50	52.50	70.00	6.50	10	5	3	7	9/16	4	5/8	5 1/2
3	45.00	49.00	67.50	90.00	8.00	11	5 1/2	3	7 1/2	5/8	4	5/8	6
3 1/2	60.00	65.00	90.00	120.00	10.00	12	6	3 1/2	8 1/2	11/16	8	5/8	7
4	70.00	75.00	105.00	140.00	12.50	13	6 1/2	4	9	11/16	8	5/8	7 1/2
5	95.00	100.00	140.00	190.00	15.00	15	7 1/2	4 1/2	10	3/4	8	3/4	8 1/2
6	125.00	135.00	190.00	250.00	18.75	16	8	5	11	13/16	8	3/4	9 1/2

Extra Heavy Brass Flanged Fittings
For 300 Pounds Steam Working Pressure

1 1/4	$20.50	$21.50	$30.50	$40.50	$4.20	8 1/2	4 1/4	2 1/2	5 1/4	17/32	4	5/8	3 7/8
1 1/2	26.50	29.00	40.00	53.00	5.40	9	4 1/2	2 3/4	6 1/8	9/16	4	3/4	4 1/2
2	33.00	36.00	49.00	66.00	6.60	10	5	3	6 1/2	5/8	8	5/8	5
2 1/2	44.50	48.50	66.00	88.00	7.80	11	5 1/2	3 1/2	7 1/2	11/16	8	3/4	5 7/8
3	52.00	62.00	85.00	115.00	9.60	12	6	3 1/2	8 1/4	3/4	8	3/4	6 5/8
3 1/2	76.00	82.00	115.00	155.00	12.00	13	6 1/2	4	9	13/16	8	3/4	7 1/4
4	90.00	95.00	135.00	177.00	15.00	14	7	4 1/2	10	7/8	8	3/4	7 7/8
5	120.00	126.00	177.00	240.00	18.00	16	8	5	11	15/16	8	3/4	9 1/4
6	158.00	170.00	240.00	315.00	22.50	17	8 1/2	5 1/2	12 1/2	1	12	3/4	10 5/8

Flagg-Seal Bronze Fittings

Threadless Fittings for I.P.S. Brass or Copper Pipe or Copper Tubing



(A) (B) (C)

To make a Flagg-Seal Silbraz Joint, the silver brazing alloy Sil-Fos is used. Both Flagg-Seal Fittings and Flagg-Seal Flanges come with the brazing alloy inserted, making the alloy an integral part of the fitting. This patented method of manufacture eliminates the necessity of carrying a separate stock of the brazing alloy.

The actual making of the joint requires but a surprisingly short time. (A) Slip pipe into fitting until it butts against shoulder. Fitting is designed to provide clearance all around the pipe. (B) First apply flame to pipe near to fitting. This heats pipe to brazing temperature and melts the Sil-Fos brazing alloy. (C) Next apply flame to band of fitting until white ring of Sil-Fos appears around pipe—visible evidence that the job is done.

Sil-Fos melts at a higher temperature than any solder, making a brazed rather than a sweat joint. The melting point of Sil-Fos is 1185°F. and its free-flowing point is 1300°F. This temperature gives the alloy great penetrating qualities. While the melting point of the Sil-Fos ring in the Flagg-Seal Silbraz Fitting (1185°F.) is substantially in excess of the usual working temperature limit (550°F.) for brass and bronze products, it does not approach the melting point temperature of either brass or bronze. For that reason, it does not cause warpage difficulties.

In this Flagg-Seal Silbraz joint, there is sufficient alloy present to make possible the disassembling and the remaking of the joint twice. No additional alloy is required to remake the joint a second time. The physical properties of Sil-Fos are as good or better than those of the metals which it is used to join. Up to its melting point, Sil-Fos maintains its strength and creep resistance as well or better than the pipe, the tubing, or the fitting. From all types of tests, it has been proved that a Sil-Fos joint is stronger than either the fitting or the pipe.

A Flagg-Seal Fitting with the Silbraz Joint Made with the Brazing Alloy Sil-Fos

Since the Sil-Fos insert is on the inside of the fitting at some distance from the face, its appearance at the face is visual proof that the joint is properly made.

The composition of all Flagg-Seal Fittings and Flagg-Seal Flanges conforms to Navy Specifications. Dimensional specifications for Flagg-Seal Fittings and Flagg-Seal Flanges also conform to Navy Specifications.

Each fitting and flange receives a rigid inspection, and is air tested under water.

Prices on Application

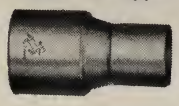
No. 401 Chase Wrought Copper Solder Couplings

Copper to Copper

Nom. Size In.	Actual O.D. Size Inches	No.	Each	Nom. Size In.	Actual O.D. Size Inches	No.	Each
1/8	1/4	4177	$.08	1 1/2	1 5/8	4093	$.38
1/4	3/8	4178	.09	2	2 1/8	4094	.68
3/8	1/2	4088	.09	2 1/2	2 5/8	4095	1.00
1/2	5/8	4089	.12	3	3 1/8	4096	1.65
5/8	3/4	4179	.15	3 1/2	3 5/8	4097	2.35
3/4	7/8	4090	.18	4	4 1/8	4098	2.95
7/8	1	4220	.22	5	5 1/8	4230	5.95
1	1 1/8	4091	.24	6	6 1/8	4231	8.35
1 1/4	1 3/8	4092	.30	8	8 1/8	4232	14.45

No. 401-R Chase Wrought Copper Solder Reducing Couplings

Copper to Copper



Nominal Size Inches	Actual O.D. Size Inches	No.	Each	Nominal Size Inches	Actual O.D. Size Inches	No.	Each
1/4 x 1/8	3/8 x 1/4	4124	$.09	2 x1 1/2	2 1/8 x1 5/8	3631	$.68
3/8 x 1/4	1/2 x 3/8	3771	.09	2 x1 1/4	2 1/8 x1 3/8	3630	.68
3/8 x 1/8	1/2 x 1/4	4467	.09	2 x1	2 1/8 x1 1/8	3629	.68
1/2 x 3/8	5/8 x 1/2	3611	.12	2 x 3/4	2 1/8 x 7/8	3628	.68
1/2 x 1/4	5/8 x 3/8	4351	.12	2 x 5/8	2 1/8 x 3/4	3864	.68
1/2 x 1/8	5/8 x 1/4	4439	.12	2 x 1/2	2 1/8 x 5/8	3627	.68
5/8 x 1/2	3/4 x 5/8	3869	.15	2 x 3/8	2 1/8 x 1/2	3626	.68
5/8 x 3/8	3/4 x 1/2	3870	.15	2 1/2 x2	2 5/8 x2 1/8	4276	1.00
5/8 x 1/4	3/4 x 3/8	3871	.15	2 1/2 x1 1/2	2 5/8 x1 5/8	4411	1.00
3/4 x 5/8	7/8 x 3/4	4222	.18	2 1/2 x1 1/4	2 5/8 x1 3/8	4413	1.00
3/4 x 1/2	7/8 x 5/8	3613	.18	2 1/2 x1	2 5/8 x1 1/8	4415	1.00
3/4 x 3/8	7/8 x 1/2	3612	.18	2 1/2 x 3/4	2 5/8 x 7/8	4417	1.00
3/4 x 1/4	7/8 x 3/8	4461	.18	3 x2 1/2	3 1/8 x2 5/8	4397	1.65
1 x 7/8	1 1/8 x1	4218	.24	3 x2	3 1/8 x2 1/8	4172	1.65
1 x 3/4	1 1/8 x 7/8	3616	.24	3 x1 1/2	3 1/8 x1 5/8	4419	1.65
1 x 5/8	1 1/8 x 3/4	3867	.24	3 x1 1/4	3 1/8 x1 3/8	4421	1.65
1 x 1/2	1 1/8 x 5/8	3615	.24	3 x1	3 1/8 x1 1/8	4423	1.65
1 x 3/8	1 1/8 x 1/2	3614	.24	3 x 3/4	3 1/8 x 7/8	4425	1.65
1 1/4 x1	1 3/8 x1 1/8	3620	.30	4 x3 1/2	4 1/8 x3 5/8	4427	2.95
1 1/4 x 3/4	1 3/8 x 7/8	3619	.30	4 x3	4 1/8 x3 1/8	4398	2.95
1 1/4 x 5/8	1 3/8 x 3/4	3866	.30	4 x2 1/2	4 1/8 x2 5/8	4429	2.95
1 1/4 x 1/2	1 3/8 x 5/8	3618	.30	4 x2	4 1/8 x2 1/8	4431	2.95
1 1/4 x 3/8	1 3/8 x 1/2	3617	.30	4 x1 1/2	4 1/8 x1 5/8	4433	2.95
1 1/2 x1 1/4	1 5/8 x1 3/8	3625	.38	4 x1 1/4	4 1/8 x1 3/8	4435	2.95
1 1/2 x1	1 5/8 x1 1/8	3624	.38	4 x1	4 1/8 x1 1/8	4437	2.95
1 1/2 x 3/4	1 5/8 x 7/8	3623	.38	.....	.....	....	....
1 1/2 x 5/8	1 5/8 x 3/4	3865	.38	.....	.....	....	....
1 1/2 x 1/2	1 5/8 x 5/8	3622	.38	.....	.....	....	....
1 1/2 x 3/8	1 5/8 x 1/2	3621	.38	.....	.....	....	....

No. C-402 Chase Cast Bronze Solder Unions

Copper to Copper

For Sizes Up to 4 Inches

Nominal Size Inches	Actual O.D. Size Inches	No.	Each	Nominal Size Inches	Actual O.D. Size Inches	No.	Each
1/8	1/4	2688	$.76	1 1/4	1 3/8	2016	$2.30
1/4	3/8	2281	.76	1 1/2	1 5/8	2017	3.35
3/8	1/2	2011	.76	2	2 1/8	2018	4.20
1/2	5/8	2012	.91	2 1/2	2 5/8	2019	8.35
5/8	3/4	2013	1.15	3	3 1/8	2020	14.45
3/4	7/8	2014	1.30	3 1/2	3 5/8	2021	23.40
1	1 1/8	2015	1.65	4	4 1/8	2022	30.25

No. C-402-F Chase Cast Bronze Solder Unions

Copper to Female I.P.S.

Nominal Size, In.	Actual O.D. Size, In.	No.	Each
1/4Cx 1/4	3/8Cx 1/4	2634	$.91
3/8Cx 3/8	1/2Cx 3/8	2023	1.05
1/2Cx 1/2	5/8Cx 1/2	2024	1.30
3/4Cx 3/4	7/8Cx 3/4	2025	1.50
1 Cx1	1 1/8Cx1	2026	2.20
1 1/4Cx1 1/4	1 3/8Cx1 1/4	2027	3.50
1 1/4Cx1	1 3/8Cx1	2635	3.50
1 1/2Cx1 1/2	1 5/8Cx1 1/2	2028	4.05
2 Cx2	2 1/8Cx2	2029	5.70

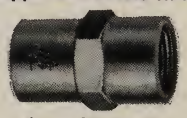
No. C-402-M Chase Cast Bronze Solder Unions

Copper to Inside I.P.T

Nominal Size, In.	Actual Size, In.	No.	Each
1/8Cx 1/8I.P.T.	1/4Cx 1/8I.P.T.	2279	$.84
1/4Cx 1/4I.P.T.	3/8Cx 1/4I.P.T.	2280	.91
1/4Cx 1/8I.P.T.	3/8Cx 1/8I.P.T.	2636	.91
3/8Cx 3/8I.P.T.	1/2Cx 3/8I.P.T.	2030	1.05
3/8Cx 1/4I.P.T.	1/2Cx 1/4I.P.T.	2637	1.05
1/2Cx 1/2I.P.T.	5/8Cx 1/2I.P.T.	2031	1.30
3/4Cx 3/4I.P.T.	7/8Cx 3/4I.P.T.	2032	1.50
1C x1I.P.T.	1 1/8Cx1I.P.T.	2033	2.20
1 1/4Cx1 1/2I.P.T.	1 3/8Cx1 1/2I.P.T.	2911	4.05
1 1/4Cx1 1/4I.P.T.	1 3/8Cx1 1/4I.P.T.	2034	3.50
1 1/4Cx1I.P.T.	1 3/8Cx1I.P.T.	2638	3.50
1 1/2Cx1 1/2I.P.T.	1 5/8Cx1 1/2I.P.T.	2035	4.05
2C x2I.P.T.	2 1/8Cx2I.P.T.	2036	5.70
3C x3I.P.T.	3 1/8Cx3I.P.T.	2912	19.45

No. 403 Chase Wrought Copper Solder Adapters

Copper to Female I.P.S.



Nominal Size, In.	Actual O.D. Size, In.	No.	Each
1/8Cx 1/8I.P.S.	1/4Cx 1/8I.P.S.	4125	$.09
1/4Cx 3/8I.P.S.	3/8Cx 3/8I.P.S.	4400	.15
1/4Cx 1/4I.P.S.	3/8Cx 1/4I.P.S.	3741	.15
1/4Cx 1/8I.P.S.	3/8Cx 1/8I.P.S.	4126	.15
3/8Cx 3/4I.P.S.	1/2Cx 3/4I.P.S.	3684	.30
3/8Cx 1/2I.P.S.	1/2Cx 1/2I.P.S.	3683	.18
3/8Cx 3/8I.P.S.	1/2Cx 3/8I.P.S.	3507	.15
3/8Cx 1/4I.P.S.	1/2Cx 1/4I.P.S.	3738	.15
1/2Cx1 I.P.S.	5/8Cx1 I.P.S.	3687	.51
1/2Cx 3/4I.P.S.	5/8Cx 3/4I.P.S.	3685	.30
1/2Cx 1/2I.P.S.	5/8Cx 1/2I.P.S.	3508	.18
1/2Cx 3/8I.P.S.	5/8Cx 3/8I.P.S.	3649	.18
1/2Cx 1/4I.P.S.	5/8Cx 1/4I.P.S.	3739	.18
3/4Cx1 I.P.S.	7/8Cx1 I.P.S.	3688	.51
3/4Cx 3/4I.P.S.	7/8Cx 3/4I.P.S.	3509	.30
3/4Cx 1/2I.P.S.	7/8Cx 1/2I.P.S.	3651	.30
3/4Cx 3/8I.P.S.	7/8Cx 3/8I.P.S.	3650	.30
1 Cx1 1/4I.P.S.	1 1/8Cx1 1/4I.P.S.	3692	.84
1 Cx1 I.P.S.	1 1/8Cx1 I.P.S.	3510	.51
1 Cx 3/4I.P.S.	1 1/8Cx 3/4I.P.S.	3654	.51
1 Cx 1/2I.P.S.	1 1/8Cx 1/2I.P.S.	3653	.51
1 1/4Cx1 1/2I.P.S.	1 3/8Cx1 1/2I.P.S.	3695	1.15
1 1/4Cx1 1/4I.P.S.	1 3/8Cx1 1/4I.P.S.	3511	.84
1 1/4Cx1 I.P.S.	1 3/8Cx1 I.P.S.	3658	.84
1 1/4Cx 3/4I.P.S.	1 3/8Cx 3/4I.P.S.	3657	.84
1 1/4Cx 1/2I.P.S.	1 3/8Cx 1/2I.P.S.	3656	.84
1 1/2Cx1 1/2I.P.S.	1 5/8Cx1 1/2I.P.S.	3512	1.15
1 1/2Cx1 1/4I.P.S.	1 5/8Cx1 1/4I.P.S.	3661	1.15
2 Cx2 I.P.S.	2 1/8Cx2 I.P.S.	4361	1.65
2 1/2Cx2 1/2I.P.S.	2 5/8Cx2 1/2I.P.S.	4362	2.85
3 Cx3 I.P.S.	3 1/8Cx3 I.P.S.	4363	3.75

No. 404 Chase Wrought Copper Solder Adapters

Copper to Male I.P.S.

Nom. Size, In.	Actual O.D. Size, In.	No.	Each
1/8Cx 1/4 I.P.S.	1/4Cx 1/4 I.P.S.	4175	$.15
1/8Cx 1/8 I.P.S.	1/4Cx 1/8 I.P.S.	4085	.09
1/4Cx 3/8 I.P.S.	3/8Cx 3/8 I.P.S.	4130	.15
1/4Cx 1/4 I.P.S.	3/8Cx 1/4 I.P.S.	3740	.15
1/4Cx 1/8 I.P.S.	3/8Cx 1/8 I.P.S.	4128	.15
3/8Cx 3/4 I.P.S.	1/2Cx 3/4 I.P.S.	3667	.30
3/8Cx 1/2 I.P.S.	1/2Cx 1/2 I.P.S.	3666	.18
3/8Cx 3/8 I.P.S.	1/2Cx 3/8 I.P.S.	3500	.15
3/8Cx 1/4 I.P.S.	1/2Cx 1/4 I.P.S.	4127	.15
1/2Cx1 I.P.S.	5/8Cx1 I.P.S.	3670	.51
1/2Cx 3/4 I.P.S.	5/8Cx 3/4 I.P.S.	3668	.30
1/2Cx 1/2 I.P.S.	5/8Cx 1/2 I.P.S.	3501	.18
1/2Cx 3/8 I.P.S.	5/8Cx 3/8 I.P.S.	3632	.18
5/8Cx1 I.P.S.	3/4Cx1 I.P.S.	3904	.51
5/8Cx 3/4 I.P.S.	3/4Cx 3/4 I.P.S.	3903	.30
5/8Cx 1/2 I.P.S.	3/4Cx 1/2 I.P.S.	3902	.23
3/4Cx1 I.P.S.	7/8Cx1 I.P.S.	3671	.51
3/4Cx 3/4 I.P.S.	7/8Cx 3/4 I.P.S.	3502	.30
3/4Cx 1/2 I.P.S.	7/8Cx 1/2 I.P.S.	3634	.30
3/4Cx 3/8 I.P.S.	7/8Cx 3/8 I.P.S.	3633	.30
7/8Cx1 I.P.S.	1 Cx1 I.P.S.	4346	.51
1 Cx1 1/2 I.P.S.	1 1/8Cx1 1/2 I.P.S.	3677	1.15
1 Cx1 1/4 I.P.S.	1 1/8Cx1 1/4 I.P.S.	3675	.84
1 Cx1 I.P.S.	1 1/8Cx1 I.P.S.	3503	.51
1 Cx 3/4 I.P.S.	1 1/8Cx 3/4 I.P.S.	3637	.51
1 Cx 1/2 I.P.S.	1 1/8Cx 1/2 I.P.S.	3636	.51
1 1/4Cx1 1/2 I.P.S.	1 3/8Cx1 1/2 I.P.S.	3678	1.15
1 1/4Cx1 1/4 I.P.S.	1 3/8Cx1 1/4 I.P.S.	3504	.84
1 1/4Cx1 I.P.S.	1 3/8Cx1 I.P.S.	3641	.84
1 1/4Cx 3/4 I.P.S.	1 3/8Cx 3/4 I.P.S.	3640	.84
1 1/2Cx1 1/2 I.P.S.	1 5/8Cx1 1/2 I.P.S.	3505	1.15
1 1/2Cx1 1/4 I.P.S.	1 5/8Cx1 1/4 I.P.S.	3644	1.15
1 1/2Cx1 I.P.S.	1 5/8Cx1 I.P.S.	3643	1.15
2 Cx2 I.P.S.	2 1/8Cx2 I.P.S.	4277	1.65
2 Cx1 1/2 I.P.S.	2 1/8Cx1 1/2 I.P.S.	3648	1.65
2 Cx1 1/4 I.P.S.	2 1/8Cx1 1/4 I.P.S.	3647	1.65
2 1/2Cx2 1/2 I.P.S.	2 5/8Cx2 1/2 I.P.S.	4364	2.85
3 Cx3 I.P.S.	3 1/8Cx3 I.P.S.	4365	3.75

Chase Wrought Copper Solder Street Adapters

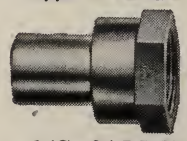
No. 404-S

Copper to Male I.P.T.

Nominal Size, In.	Actual Size, In.	No.	Each
3/8Cx 3/8 I.P.T.	1/2Cx 3/8 I.P.T.	4402	$.15
1/2Cx 1/2 I.P.T.	5/8Cx 1/2 I.P.T.	3765	.18
3/4Cx 3/4 I.P.T.	7/8Cx 3/4 I.P.T.	3767	.30
1 Cx1 I.P.T.	1 1/8Cx1 I.P.T.	4403	.51
1 1/4Cx1 1/4 I.P.T.	1 3/8Cx1 1/4 I.P.T.	3901	.84
1 1/2Cx1 1/2 I.P.T.	1 5/8Cx1 1/2 I.P.T.	3900	1.15

No. 403-S

Copper to Female



3/8Cx 3/8 I.P.T.	1/2Cx 3/8 I.P.T.	4443	$.15
1/2Cx 1/2 I.P.T.	5/8Cx 1/2 I.P.T.	3766	.18
1/2Cx 3/8 I.P.T.	5/8Cx 3/8 I.P.T.	3700	.18
3/4Cx 3/4 I.P.T.	7/8Cx 3/4 I.P.T.	3768	.30
3/4Cx 1/2 I.P.T.	7/8Cx 1/2 I.P.T.	4440	.30
1 Cx1 I.P.T.	1 1/8Cx1 I.P.T.	4444	.51

No. 407 Chase Wrought Copper 90° Solder Elbows

Copper to Copper

Nominal Size, In.	Actual O.D. Size, In.	No.	Each
1/8x1/8	1/4x 1/4	4083	$.15
1/4x1/4	3/8x 3/8	3743	.15
1/4x1/8	3/8x 1/4	4129	.15
3/8x3/8	1/2x 1/2	4101	.15
3/8x1/4	1/2x 3/8	3745	.15
1/2x1/2	5/8x 5/8	4102	.18
1/2x3/8	5/8x 1/2	3566	.18
1/2x1/4	5/8x 3/8	3746	.18
5/8x5/8	3/4x 3/4	4103	.23
3/4x3/4	7/8x 7/8	4104	.30
3/4x1/2	7/8x 5/8	3568	.30
3/4x3/8	7/8x 1/2	3567	.30
7/8x7/8	1 x1	4219	.43
1x1	1 1/8x1 1/8	4105	.55
1x7/8	1 1/8x1	4217	.55
1 x 3/4	1 1/8x 7/8	3571	$.55
1 x 5/8	1 1/8x 3/4	3873	.55
1 x 1/2	1 1/8x 5/8	3570	.55
1 x 3/8	1 1/8x 1/2	3569	.55
1 1/4x1 1/4	1 3/8x1 3/8	3525	.84
1 1/4x1	1 3/8x1 1/8	3575	.84
1 1/4x 3/4	1 3/8x 7/8	3574	.84
1 1/4x 5/8	1 3/8x 3/4	3872	.84
1 1/4x 1/2	1 3/8x 5/8	3573	.84
1 1/2x1 1/2	1 5/8x1 5/8	3526	1.15
1 1/2x1 1/4	1 5/8x1 3/8	3578	1.15
1 1/2x1	1 5/8x1 1/8	3577	1.15
1 1/2x 3/4	1 5/8x 7/8	3576	1.15
2 x2	2 1/8x2 1/8	3527	1.65
2 x1 1/2	2 1/8x1 5/8	3582	1.65
2 x1 1/4	2 1/8x1 3/8	3581	1.65
2 x1	2 1/8x1 1/8	3580	1.65
2 1/2x2 1/2	2 5/8x2 5/8	4279	3.05
3 x3	3 1/8x3 1/8	4227	4.60
4 x4	4 1/8x4 1/8	4396	8.70

No. 407-A Chase Wrought Copper 45° Solder Elbows

Copper to Copper

Nom. Size, In.	Act. O.D. In.	No.	Each
1/8x 1/8	1/4x 1/4	4609	$.15
1/4x 1/4	3/8x 3/8	4112	.15
3/8x 3/8	1/2x 1/2	4113	.15
1/2x 1/2	5/8x 5/8	4114	.18
1/2x 3/8	5/8x 1/2	3549	.18
5/8x 5/8	3/4x 3/4	4115	.23
3/4x 3/4	7/8x 7/8	4116	.30
3/4x 1/2	7/8x 5/8	3551	.30
1 x1	1 1/8x1 1/8	4117	.55
1 x 3/4	1 1/8x 7/8	3554	.55
1 1/4x1 1/4	1 3/8x1 3/8	3546	.84
1 1/2x1 1/2	1 5/8x1 5/8	3547	1.15
2 x2	2 1/8x2 1/8	3548	1.65
2 1/2x2 1/2	2 5/8x2 5/8	4280	3.05
3 x3	3 1/8x3 1/8	4350	4.60
4 x4	4 1/8x4 1/8	4445	8.70

No. 407-S Chase Wrought Copper 90° Solder Street Elbows

Fitting to Copper

Nominal Size, In.	Actual O.D. In.	No.	Each
1/8x 1/8	1/4x 1/4	4084	$.15
1/4x 1/4	3/8x 3/8	3744	.15
3/8x 3/8	1/2x 1/2	4107	.15
1/2x 1/2	5/8x 5/8	4108	.18
5/8x 5/8	3/4x 3/4	4109	.23
3/4x 3/4	7/8x 7/8	4110	.30
1 x1	1 1/8x1 1/8	4111	.55
1 1/4x1 1/4	1 3/8x1 3/8	3532	.84
1 1/2x1 1/2	1 5/8x1 5/8	3533	1.15
2 x2	2 1/8x2 1/8	3534	1.65
2 1/2x2 1/2	2 5/8x2 5/8	4281	3.05
3 x3	3 1/8x3 1/8	4348	4.60
4 x4	4 1/8x4 1/8	4447	8.70

No. C-408-F Chase Cast Bronze Flanged Solder Elbows

Copper to Inside I.P.T.

Nominal Size, In.	Actual Size, In.	No.	Each
3/8Cx1/2 I.P.T.	1/2Cx1/2 I.P.T.	2202	$.55
1/2Cx1/2 I.P.T.	5/8Cx1/2 I.P.T.	4066	.55
1/2Cx3/8 I.P.T.	5/8Cx3/8 I.P.T.	4067	.55
3/4Cx3/4 I.P.T.	7/8Cx3/4 I.P.T.	2652	.75

No. 407-AS Chase Wrought Copper 45° Solder Street Elbows

Fitting to Copper

Nominal Size, In.	Actual O.D. Size, In.	No.	Each
1/8x 1/8	1/4x 1/4	4610	$.15
1/4x 1/4	3/8x 3/8	4118	.15
3/8x 3/8	1/2x 1/2	4119	.15
1/2x 1/2	5/8x 5/8	4120	.18
5/8x 5/8	3/4x 3/4	4121	.23
3/4x 3/4	7/8x 7/8	4122	.30
1 x1	1 1/8x1 1/8	4123	.55
1 1/4x1 1/4	1 3/8x1 3/8	3705	.84
1 1/2x1 1/2	1 5/8x1 5/8	3706	1.15
2 x2	2 1/8x2 1/8	3707	1.65
2 1/2x2 1/2	2 5/8x2 5/8	4282	3.05
3 x3	3 1/8x3 1/8	4349	4.60
4 x4	4 1/8x4 1/8	4446	8.70

No. C-408-D Chase Cast Bronze Solder Drop Ear Elbows

Copper to Inside I.P.T.

Nominal Size, In.	Actual Size, In.	No.	Each
3/8Cx1/2 I.P.T.	1/2Cx1/2 I.P.T.	4594	$.27
3/8Cx3/8 I.P.T.	1/2Cx3/8 I.P.T.	4595	.23
1/2Cx1/2 I.P.T.	5/8Cx1/2 I.P.T.	4064	.27
1/2Cx3/8 I.P.T.	5/8Cx3/8 I.P.T.	4065	.27
3/4Cx3/4 I.P.T.	7/8Cx3/4 I.P.T.	2205	.46
1 Cx1 I.P.T.	1 1/8Cx1 I.P.T.	2925	.78

Chase Wrought Copper Elbows and Tees

No. 408 Elbow

No. 409 Elbow

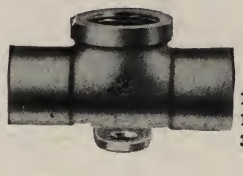
No. 412 Tee

Nominal Size Inches	90° Elbow No. 408 Copper to Female I.P.S. No.	Each	No. 409 Copper to Male I.P.S. No.	Each
3/8Cx3/8	4500	$.28	4499	$.28
1/2Cx1/2	4502	.40	4501	.40
1/2Cx3/8	4507	.40	....	....
3/4Cx3/4	4504	.62	4503	.62
3/4Cx1/2	4508	.62	....	....
1 Cx1	4506	1.04	4505	1.04
1 Cx3/4	4509	1.04	....	....

Nominal Size Inches	No. 412 Tee Copper to Copper to Female I.P.S. No.	Each
3/8Cx3/8Cx3/8	4510	$.40
1/2Cx1/2Cx1/2	4511	.48
1/2Cx1/2Cx3/8	4514	.48
3/4Cx3/4Cx3/4	4512	.86
3/4Cx3/4Cx1/2	4515	.86
1 Cx1 Cx1	4513	1.35
1 Cx1 Cx3/4	4516	1.35

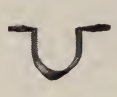
No. C-412-D Chase Cast Bronze Drop Ear Tees

Copper to Copper to Inside I.P.T.



Nominal Size, In.	Actual Size, In.	No.	Each
1/2Cx1/2Cx1/2I.P.T.	5/8x5/8x1/2	4062	$.46
1/2Cx1/2Cx3/8I.P.T.	5/8x5/8x3/8	4063	.46
3/4Cx3/4Cx3/4I.P.T.	7/8x7/8x3/4	2630	.76

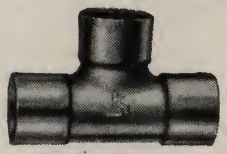
No. 1019 Chase Copper Tube Straps



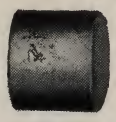
Nom. Size, In.	Actual Size, In.	No.	Per 1000	Nom. Size, In.	Actual Size, In.	No.	Per 1000
1/8	1/4	2321	$30.10	1	1 1/8	2103	$77.50
1/4	3/8	2098	33.40	1 1/4	1 3/8	2104	120.10
3/8	1/2	2099	42.60	1 1/2	1 5/8	2105	139.80
1/2	5/8	2100	47.10	2	2 1/8	2106	176.30
5/8	3/4	2101	56.20	3	3 1/8	2322	410.40
3/4	7/8	2102	65.40	...	...	....	.....

No. W-411 Chase Wrought Copper Solder Tees

Copper to Copper to Copper



Nom. Size, In.	Act. O.D. Size, In.	No.	Each
1/8x 1/8x 1/8	1/4x 1/4x 1/4	4031	$.23
1/4x 1/4x 1/4	3/8x 3/8x 3/8	3770	.23
1/4x 1/4x 1/8	3/8x 3/8x 1/4	4099	.23
1/4x 1/8x 1/4	3/8x 1/4x 3/8	4247	.23
1/4x 1/8x 1/8	3/8x 1/4x 1/4	4248	.23
3/8x 3/8x 1/2	1/2x 1/2x 5/8	4286	.30
3/8x 3/8x 3/8	1/2x 1/2x 1/2	4182	.23
3/8x 3/8x 1/4	1/2x 1/2x 3/8	4193	.25
1/2x 1/2x 3/4	5/8x 5/8x 7/8	4292	.54
1/2x 1/2x 1/2	5/8x 5/8x 5/8	4183	.27
1/2x 1/2x 3/8	5/8x 5/8x 1/2	4198	.30
1/2x 1/2x 1/4	5/8x 5/8x 3/8	4194	.30
1/2x 3/8x 1/2	5/8x 1/2x 5/8	4307	.30
1/2x 3/8x 3/8	5/8x 1/2x 1/2	4250	.30
1/2x 1/4x 1/2	5/8x 3/8x 5/8	4607	.30
5/8x 5/8x 5/8	3/4x 3/4x 3/4	4184	.38
5/8x 5/8x 1/2	3/4x 3/4x 5/8	4342	.42
5/8x 5/8x 3/8	3/4x 3/4x 1/2	4196	.42
5/8x 5/8x 1/4	3/4x 3/4x 3/8	4195	.42
3/4x 3/4x1	7/8x 7/8x1 1/8	4294	.84
3/4x 3/4x 3/4	7/8x 7/8x 7/8	4185	.49
3/4x 3/4x 5/8	7/8x 7/8x 3/4	4343	.54
3/4x 3/4x 1/2	7/8x 7/8x 5/8	4200	.54
3/4x 3/4x 3/8	7/8x 7/8x 1/2	4199	.54
3/4x 3/4x 1/4	7/8x 7/8x 3/8	4379	.54
3/4x 1/2x 3/4	7/8x 5/8x 7/8	4202	.54
3/4x 1/2x 1/2	7/8x 5/8x 5/8	4201	.54
3/4x 1/2x 3/8	7/8x 5/8x 1/2	4244	.54
1 x1 x1	1 1/8x1 1/8x1 1/8	4186	.76
1 x1 x 3/4	1 1/8x1 1/8x 7/8	4204	.84
1 x1 x 5/8	1 1/8x1 1/8x 3/4	4197	.84
1 x1 x 1/2	1 1/8x1 1/8x 5/8	4203	.84
1 x1 x 3/8	1 1/8x1 1/8x 1/2	4385	.84
1 x 3/4x1	1 1/8x 7/8x1 1/8	4236	.84
1 x 3/4x 3/4	1 1/8x 7/8x 7/8	4205	.84
1 x 3/4x 1/2	1 1/8x 7/8x 5/8	4359	.84
1 x 1/2x1	1 1/8x 5/8x1 1/8	4315	.84
1 x 1/2x 3/4	1 1/8x 5/8x 7/8	4384	.84
1 x 1/2x 1/2	1 1/8x 5/8x 5/8	4332	.84
1 1/4x1 1/4x1 1/4	1 3/8x1 3/8x1 3/8	4187	1.15
1 1/4x1 1/4x1	1 3/8x1 3/8x1 1/8	4208	1.25
1 1/4x1 1/4x 3/4	1 3/8x1 3/8x 7/8	4206	1.25
1 1/4x1 1/4x 1/2	1 3/8x1 3/8x 5/8	4283	1.25
1 1/4x1 1/4x 3/8	1 3/8x1 3/8x 1/2	4601	1.25
1 1/4x1 x1 1/4	1 3/8x1 1/8x1 3/8	4316	1.25
1 1/4x1 x1	1 3/8x1 1/8x1 1/8	4333	1.25
1 1/4x1 x 3/4	1 3/8x1 1/8x 7/8	4386	1.25
1 1/4x 3/4x1 1/4	1 3/8x 7/8x1 3/8	4207	1.25
1 1/4x 3/4x1	1 3/8x 7/8x1 1/8	4284	1.25
1 1/4x 3/4x 3/4	1 3/8x 7/8x 7/8	4334	1.25
1 1/2x1 1/2x1 1/2	1 5/8x1 5/8x1 5/8	4188	1.65
1 1/2x1 1/2x1 1/4	1 5/8x1 5/8x1 3/8	4210	1.85
1 1/2x1 1/2x1	1 5/8x1 5/8x1 1/8	4209	1.85
1 1/2x1 1/2x 3/4	1 5/8x1 5/8x 7/8	4345	1.85
1 1/2x1 1/2x 1/2	1 5/8x1 5/8x 5/8	4389	1.85
1 1/2x1 1/4x1 1/2	1 5/8x1 3/8x1 5/8	4318	1.85
1 1/2x1 1/4x1 1/4	1 5/8x1 3/8x1 3/8	4336	1.85
1 1/2x1 1/4x1	1 5/8x1 3/8x1 1/8	4388	1.85
1 1/2x1 1/4x 3/4	1 5/8x1 3/8x 7/8	4387	1.85
1 1/2x1 x1 1/2	1 5/8x1 1/8x1 5/8	4319	1.85
1 1/2x1 x1 1/4	1 5/8x1 1/8x1 3/8	4243	1.85
1 1/2x1 x1	1 5/8x1 1/8x1 1/8	4337	1.85
2 x2 x2	2 1/8x2 1/8x2 1/8	4189	2.30
2 x2 x1 1/2	2 1/8x2 1/8x1 5/8	4214	2.50
2 x2 x1 1/4	2 1/8x2 1/8x1 3/8	4213	2.50
2 x2 x1	2 1/8x2 1/8x1 1/8	4212	2.50
2 x2 x 3/4	2 1/8x2 1/8x 7/8	4211	2.50
2 x2 x 1/2	2 1/8x2 1/8x 5/8	4392	2.50
2 x1 1/2x2	2 1/8x1 5/8x2 1/8	4321	2.50
2 x1 1/2x1 1/2	2 1/8x1 5/8x1 5/8	4339	2.50
2 x1 1/2x1 1/4	2 1/8x1 5/8x1 3/8	4391	2.50
2 x1 1/2x1	2 1/8x1 5/8x1 1/8	4390	2.50
2 x1 1/4x1 1/4	2 1/8x1 3/8x1 3/8	4340	2.50
2 x1 x2	2 1/8x1 1/8x2 1/8	4323	2.50
2 1/2x2 1/2x2 1/2	2 5/8x2 5/8x2 5/8	4278	4.85
3 x3 x3	3 1/8x3 1/8x3 1/8	4226	6.90
4 x4 x4	4 1/8x4 1/8x4 1/8	4395	10.65



No. 416-C Chase Wrought Copper Solder Caps

For Tube End

Nom. Size, In.	Actual O.D. Size, In.	No.	Each
1/8	1/4	4586	$.08
1/4	3/8	3742	.09
3/8	1/2	3583	.09
1/2	5/8	3584	.12
5/8	3/4	3893	.15
3/4	7/8	3585	.18
1	1 1/8	3586	.24
1 1/4	1 3/8	3587	.30
1 1/2	1 5/8	3588	.38
2	2 1/8	3589	.68
2 1/2	2 5/8	3849	1.00
3	3 1/8	3850	1.65
3 1/2	3 5/8	3853	2.35
4	4 1/8	3851	2.95

No. C-416-P Chase Cast Bronze Solder Plugs

Nominal Size Inches	Actual O.D. Size Inches	No.	Each
3/8	1/2	2050	$.09
1/2	5/8	4405	.12
3/4	7/8	4404	.18
1	1 1/8	4406	.24
1 1/4	1 3/8	2054	.76
1 1/2	1 5/8	2055	1.05
2	2 1/8	2056	1.50
2 1/2	2 5/8	2241	2.60
3	3 1/8	2264	3.40
3 1/2	3 5/8	2693	5.30
4	4 1/8	2265	5.80
5	5 1/8	2631	14.45
6	6 1/8	2632	19.00

No. 417 Chase Solder Reducers

Fitting to Copper

Flush Type **Long Pattern Type**

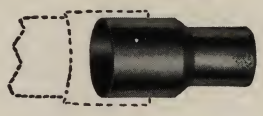
For sweating into another fitting to reduce the opening.

Nominal Size, In.	Actual O.D. Size, In.	No.	Each	Nominal Size, In.	Actual O.D. Size, In.	No.	Each
1/4x 1/8	3/8x 1/4	3892	$.09	2 1/2x2	2 5/8x2 1/8	3840	$2.60
3/8x 1/4	1/2x 3/8	3890	.09	*2 1/2x1 1/2	2 5/8x1 5/8	3841	2.60
3/8x 1/8	1/2x 1/4	3891	.09	*2 1/2x1 1/4	2 5/8x1 3/8	3842	2.60
1/2x 3/8	5/8x 1/2	3946	.12	3 x2 1/2	3 1/8x2 5/8	3843	3.40
1/2x 1/4	5/8x 3/8	3947	.12	*3 x2	3 1/8x2 1/8	3844	3.40
5/8x 1/2	3/4x 5/8	4132	.15	*3 x1 1/2	3 1/8x1 5/8	3845	3.40
5/8x 3/8	3/4x 1/2	4133	.15	3 1/2x3	3 5/8x3 1/8	4026	5.30
5/8x 1/4	3/4x 3/8	4134	.15	*3 1/2x2 1/2	3 5/8x2 5/8	2755	5.30
3/4x 5/8	7/8x 3/4	3948	.18	*3 1/2x2	3 5/8x2 1/8	2756	5.30
3/4x 1/2	7/8x 5/8	3949	.18	*3 1/2x1 1/2	3 5/8x1 5/8	3094	5.30
3/4x 3/8	7/8x 1/2	3950	.18	*3 1/2x1 1/4	3 5/8x1 3/8	2952	5.30
1 x 7/8	1 1/8x1	4238	.46	*3 1/2x1	3 5/8x1 1/8	3087	5.30
1 x 3/4	1 1/8x 7/8	3951	.46	4 x3 1/2	4 1/8x3 5/8	4027	5.80
1 x 5/8	1 1/8x 3/4	4131	.46	*4 x3	4 1/8x3 1/8	3846	5.80
1 x 1/2	1 1/8x 5/8	3952	.46	*4 x2 1/2	4 1/8x2 5/8	3847	5.80
1 1/4x1	1 3/8x1 1/8	3953	.76	*4 x2	4 1/8x2 1/8	3848	5.80
*1 1/4x 3/4	1 3/8x 7/8	3954	.76	*5 x4	5 1/8x4 1/8	2257	14.45
*1 1/4x 1/2	1 3/8x 5/8	3955	.76	*5 x3	5 1/8x3 1/8	2258	14.45
1 1/2x1 1/4	1 5/8x1 3/8	3956	1.05	*5 x2	5 1/8x2 1/8	2259	14.45
1 1/2x1	1 5/8x1 1/8	3957	1.05	*6 x5	6 1/8x5 1/8	2260	19.00
*1 1/2x 3/4	1 5/8x 7/8	3958	1.05	*6 x4	6 1/8x4 1/8	2261	19.00
2 x1 1/2	2 1/8x1 5/8	3959	1.50	*6 x3	6 1/8x3 1/8	2262	19.00
*2 x1 1/4	2 1/8x1 3/8	3960	1.50	*6 x2	6 1/8x2 1/8	2263	19.00
*2 x1	2 1/8x1 1/8	3961	1.50	.....	.....	.....	.....

*Made long pattern cast bronze as shown in right hand illustration. Other sizes are flush type. Flush bushings under 2 inches are wrought copper; larger sizes are cast bronze.

No. 418 Chase Wrought Copper Fitting Reducers

Fitting to Copper

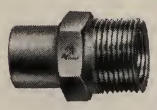


Nominal Size Inches	Actual O.D. Size Inches	No.	Each
3/8x 1/4	1/2x 3/8	4449	$.09
3/8x 1/8	1/2x 1/4	4450	.09
1/2x 3/8	5/8x 1/2	4451	.12
1/2x 1/4	5/8x 3/8	4452	.12
5/8x 1/2	3/4x 5/8	4453	.15
5/8x 3/8	3/4x 1/2	4454	.15
5/8x 1/4	3/4x 3/8	4455	.15
3/4x 5/8	7/8x 3/4	4456	.18
3/4x 1/2	7/8x 5/8	4457	.18
3/4x 3/8	7/8x 1/2	4458	.18
3/4x 1/4	7/8x 3/8	4459	.18
1 x 7/8	1 1/8x1	4460	.24
1 x 3/4	1 1/8x 7/8	4254	.24
1 x 5/8	1 1/8x 3/4	4253	.24
1 x 1/2	1 1/8x 5/8	4252	.24
1 x 3/8	1 1/8x 1/2	4251	.24
1 1/4x1	1 3/8x1 1/8	4259	.30
1 1/4x 3/4	1 3/8x 7/8	4258	.30
1 1/4x 5/8	1 3/8x 3/4	4257	.30
1 1/4x 1/2	1 3/8x 5/8	4256	.30
1 1/4x 3/8	1 3/8x 1/2	4255	.30
1 1/2x1 1/4	1 5/8x1 3/8	4265	.38
1 1/2x1	1 5/8x1 1/8	4264	.38
1 1/2x 3/4	1 5/8x 7/8	4263	.38
1 1/2x 5/8	1 5/8x 3/4	4262	.38
1 1/2x 1/2	1 5/8x 5/8	4261	.38
1 1/2x 3/8	1 5/8x 1/2	4260	.38
2 x1 1/2	2 1/8x1 5/8	4272	$.68
2 x1 1/4	2 1/8x1 3/8	4271	.68
2 x1	2 1/8x1 1/8	4270	.68
2 x 3/4	2 1/8x 7/8	4269	.68
2 x 5/8	2 1/8x 3/4	4268	.68
2 x 1/2	2 1/8x 5/8	4267	.68
2 x 3/8	2 1/8x 1/2	4266	.68
2 1/2x2	2 5/8x2 1/8	4273	1.00
2 1/2x1 1/2	2 5/8x1 5/8	4412	1.00
2 1/2x1 1/4	2 5/8x1 3/8	4414	1.00
2 1/2x1	2 5/8x1 1/8	4416	1.00
2 1/2x 3/4	2 5/8x 7/8	4418	1.00
3 x2 1/2	3 1/8x2 5/8	4409	1.65
3 x2	3 1/8x2 1/8	4274	1.65
3 x1 1/2	3 1/8x1 5/8	4420	1.65
3 x1 1/4	3 1/8x1 3/8	4422	1.65
3 x1	3 1/8x1 1/8	4424	1.65
3 x 3/4	3 1/8x 7/8	4426	1.65
4 x3 1/2	4 1/8x3 5/8	4428	2.95
4 x3	4 1/8x3 1/8	4410	2.95
4 x2 1/2	4 1/8x2 5/8	4430	2.95
4 x2	4 1/8x2 1/8	4432	2.95
4 x1 1/2	4 1/8x1 5/8	4434	2.95
4 x1 1/4	4 1/8x1 3/8	4436	2.95
4 x1	4 1/8x1 1/8	4438	2.95
.....	.....	....	....
.....	.....	....	....

Chase Cast Bronze Solder Range Boiler Fittings

No. C-421 Straight Type

Copper x Outside I.P.T.x Inside I. P. T.



Nominal Size Inches	Actual Size Inches	No.	Each
1/2x1x1/2	5/8x1x1/2	4407	$.53
3/4x1x3/4	7/8x1x3/4	4369	.53
3/4x1x1/2	7/8x1x1/2	4408	.53
1 x1x3/4	1 1/8x1x3/4	2748	.53

No. C-420 Elbow Type

Copper x Outside I.P.T.x Inside I. P. T.

1/2x1x1/2	5/8x1x1/2	2068	$.61
3/4x1x3/4	7/8x1x3/4	4368	.61
3/4x1x1/2	7/8x1x1/2	2070	.61
1 x1x3/4	1 1/8x1x3/4	2747	.61

No. 438 Chase Wrought Copper Solder Return Bends

Copper to Copper

Nominal Size Inches	Actual Size Inches	Center to Center Inches	No.	Each
1/4	3/8	1 1/4	4353	$.24
3/8	1/2	1 3/8	4068	.30
1/2	5/8	1 3/4	4069	.38
5/8	3/4	2 1/8	4070	.50
3/4	7/8	2 3/8	4071	.53
1	1 1/8	2 7/8	4072	.76
1 1/4	1 3/8	4	4073	1.20
1 1/2	1 5/8	4 3/8	4028	1.65
2	2 1/8	5 1/8	4074	2.65

Chase Copper Tube Flared Fittings

45° Elbows

Copper to Female S.P.S.

No. 308A

Size In.	No. 308A Each	No. 308AR Reducing Each	No. 308AD Drop Ear Each
1/8	$.40	....	....
1/4	.45	$.45	....
3/8	.50	.50	$.75
1/2	.60	.60	1.00
5/8	.80	.80	....
3/4	1.00	1.00	1.50
1	1.50	1.50	2.65
1 1/4	2.45	2.45	....
1 1/2	3.80	3.80	....
2	6.10	6.10	....
2 1/2	14.40	14.40	....

90° Elbows

Copper to Male S.P.S.

No. 309

Size In.	No. 309 Each	No. 309R Reducing Each	No. 309D Drop Ear Each
1/8	$.40	....	....
1/4	.45	$.45	....
3/8	.50	.50	$.75
1/2	.60	.60	1.00
5/8	.80	.80	....
3/4	1.00	1.00	1.50
1	1.50	1.50	2.65
1 1/4	2.45	2.45	....
1 1/2	3.80	3.80	....
2	6.10	6.10	....
2 1/2	14.40	14.40	....

45° Elbows

Copper to Male S.P.S.

No. 309A

Size In.	No. 309A Each	No. 309AR Reducing Each	No. 309AD Drop Ear Each
1/8	$.40	....	....
1/4	.45	$.45	....
3/8	.50	.50	$.75
1/2	.60	.60	1.00
5/8	.80	.80	....
3/4	1.00	1.00	1.50
1	1.50	1.50	2.65
1 1/4	2.45	2.45	....
1 1/2	3.80	3.80	....
2	6.10	6.10	....
2 1/2	14.40	14.40	....

Adapters

Copper to Female S.P.S.

No. 303

Size In.	No. 303 Each	No. 303R Reducing Each
1/8	$.28	....
1/4	.32	$.32
3/8	.35	.35
1/2	.45	.45
5/8	.55	.55
3/4	.60	.60
1	1.15	1.15
1 1/4	1.80	1.80
1 1/2	2.65	2.65
2	4.10	4.10
2 1/2	7.85	7.85

Adapters

Copper to Male S.P.S.

No. 304

Size In.	No. 304 Each	No. 304R Reducing Each
1/8	$.28	....
1/4	.32	$.32
3/8	.35	.35
1/2	.45	.45
5/8	.55	.55
3/4	.60	.60
1	1.15	1.15
1 1/4	1.80	1.80
1 1/2	2.65	2.65
2	4.10	4.10
2 1/2	7.85	7.85

3-Part Unions

Copper to Copper

No. 301

Size In.	No. 301 Each	No. 301R Reducing Each
1/8	$.40	....
1/4	.45	$.45
3/8	.50	.50
1/2	.60	.60
5/8	.80	.80
3/4	1.00	1.00
1	1.50	1.50
1 1/4	2.45	2.45
1 1/2	3.80	3.80
2	6.10	6.10
2 1/2	12.75	12.75

No. 302 2-Part Unions

Copper to Copper

Size In.	Each	Size In.	Each
1/8	$.28	1	$1.15
1/4	.32	1 1/4	1.80
3/8	.35	1 1/2	2.65
1/2	.45	2	4.10
5/8	.55	...	....
3/4	.60	...	....

No. 317 Bushings

Male S.P.S. to Female S.P.S.

Size In.	Each	Size In.	Each
1/4	$.08	1 1/4	$.40
3/8	.10	1 1/2	.56
1/2	.12	2	.80
3/4	.18	2 1/2	1.20
1	.28	...	....

No. 323 Fitting Reducers

For Use on Branch of Copper Fitting

Size In.	Each	Size In.	Each
1/4	$.40	1	$1.20
3/8	.50	1 1/4	2.15
1/2	.55	1 1/2	3.05
5/8	.65	2	4.10
3/4	.70	...	....

Chase Copper Tube Flared Fittings

Tees
Copper to Copper to Copper

No. 311

Size In.	No. 311 Each	No. 311R Reducing Each	No. 311D Drop Ear Each
1/8	$.60	....	....
1/4	.70	$.70	....
3/8	.70	.70	$1.20
1/2	1.00	1.00	1.50
5/8	1.20	1.20	....
3/4	1.35	1.35	2.35
1	2.45	2.45	3.95
1 1/4	4.20	4.20	....
1 1/2	6.40	6.40	....
2	9.90	9.90	....
2 1/2	20.20	20.20	....

Tees
Copper to Copper to Female

No. 312

Size In.	No. 312 Each	No. 312R Reducing Each	No. 312D Drop Ear Each
1/8	$.60	....	....
1/4	.70	$.70	....
3/8	.70	.70	$1.20
1/2	1.00	1.00	1.50
5/8	1.20	1.20	....
3/4	1.35	1.35	2.35
1	2.45	2.45	3.95
1 1/4	4.20	4.20	....
1 1/2	6.40	6.40	....
2	9.90	9.90	....
2 1/2	20.20	20.20	....

Tees
Copper to Copper to Male S.P.S.

No. 313

Size Inch	No. 313 Each	No. 313R Reducing Each	No. 313D Drop Ear Each
1/8	$.60	....	....
1/4	.70	$.70	....
3/8	.70	.70	$1.20
1/2	1.00	1.00	1.50
5/8	1.20	1.20	....
3/4	1.35	1.35	2.35
1	2.45	2.45	3.95
1 1/4	4.20	4.20	....
1 1/2	6.40	6.40	....
2	9.90	9.90	....
2 1/2	20.20	20.20	....

Tees
Copper to Female S.P.S. to Copper

No. 314

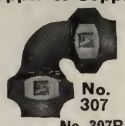
Size In.	No. 314 Each	No. 314R Reducing Each	No. 314D Drop Ear Each
1/8	$.60	....	....
1/4	.70	$.70	....
3/8	.70	.70	$1.20
1/2	1.00	1.00	1.50
5/8	1.20	1.20	....
3/4	1.35	1.35	2.35
1	2.45	2.45	3.95
1 1/4	4.20	4.20	....
1 1/2	6.40	6.40	....
2	9.90	9.90	....
2 1/2	20.20	20.20	....

Tees
Copper to Male S.P.S. to Copper

No. 315

Size In.	No. 315 Each	No. 315R Reducing Each	No. 315D Drop Ear Each
1/8	$.60	....	....
1/4	.70	$.70	....
3/8	.70	.70	$1.20
1/2	1.00	1.00	1.50
5/8	1.20	1.20	....
3/4	1.35	1.35	2.35
1	2.45	2.45	3.95
1 1/4	4.20	4.20	....
1 1/2	6.40	6.40	....
2	9.90	9.90	....
2 1/2	20.20	20.20	....

90° Elbows
Copper to Copper



No. 307

Size In.	No. 307 Each	No. 307R Reducing Each	No. 307D Drop Ear Each
1/8	$.40	....	....
1/4	.45	$.45	....
3/8	.50	.50	$.75
1/2	.60	.60	1.00
5/8	.80	.80	....
3/4	1.00	1.00	1.50
1	1.50	1.50	2.65
1 1/4	2.45	2.45	....
1 1/2	3.80	3.80	....
2	6.10	6.10	....
2 1/2	14.40	14.40	....

45° Elbows
Copper to Copper

No. 307A

Size In.	No. 307A Each	No. 307AR Reducing Each	No. 307AD Drop Ear Each
1/8	$.40	....	....
1/4	.45	$.45	....
3/8	.50	.50	$.75
1/2	.60	.60	1.00
5/8	.80	.80	....
3/4	1.00	1.00	1.50
1	1.50	1.50	2.65
1 1/4	2.45	2.45	....
1 1/2	3.80	3.80	....
2	6.10	6.10	....
2 1/2	14.40	14.40	....

90° Elbows
Copper to Female S.P.S.

No. 308

Size In.	No. 308 Each	No. 308R Reducing Each	No. 308D Drop Ear Each
1/8	$.40	....	....
1/4	.45	$.45	....
3/8	.50	.50	$.75
1/2	.60	.60	1.00
5/8	.80	.80	....
3/4	1.00	1.00	1.50
1	1.50	1.50	2.65
1 1/4	2.45	2.45	....
1 1/2	3.80	3.80	....
2	6.10	6.10	....
2 1/2	14.40	14.40	....

Chase Copper Tube Flared Fittings

Plugs for Tube
For Use on Line of Tube

No. 316P

Size In.	Each
1/8	$.21
1/4	.24
3/8	.27
1/2	.30
5/8	.40
3/4	.50
1	.75
1 1/4	1.50
1 1/2	2.05
2	3.80

Caps
For Use on Copper Branch of Tee or Elbow

No. 316C

Size, In.	Each
1/8	$.21
1/4	.24
3/8	.27
1/2	.30
5/8	.40
3/4	.50
1	.75
1 1/4	1.50
1 1/2	2.05
2	3.80

Female Tube Nut Adapters

No. 300F

Size, In.	Each
1/8	$.15
1/4	.17
3/8	.23
1/2	.30
5/8	.35
3/4	.40
1	.60
1 1/4	1.05
1 1/2	1.50
2	2.80

Male Tube Nut Adapters

No. 300M

Size, In.	Each
1/8	$.15
1/4	.17
3/8	.23
1/2	.30
5/8	.35
3/4	.40
1	.60
1 1/4	1.05
1 1/2	1.50
2	2.80

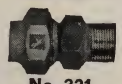
Sleeve Nuts

No. 300

Size, In.	Each
1/8	$.11
1/4	.12
3/8	.12
1/2	.15
5/8	.18
3/4	.20
1	.40
1 1/4	.60
1 1/2	.90
2	1.50

Range Boiler Fittings
Copper to Male S.P.S.

No. 320



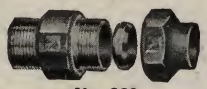
No. 321

Size In.	No. 320 Each	No. 321 Each
*3/4	$1.05	$.70
†1	1.05	.70

*Tapped for 1/2-in. S.P.S. boiler tube.

†Tapped for 1/2 or 3/4-in. S.P.S. boiler tube.

Tank Slip-Fittings
Copper to Male S.P.S.

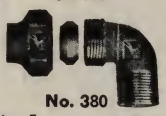


No. 329

Size, In.	Each
1/8	$.55
1/4	.55
3/8	.70
1/2	1.05
5/8	1.45
3/4	1.80
1	3.05
1 1/4	4.55
1 1/2	7.90
2	10.25

Male pipe thread increased one size.

Slip-Union Elbows
Copper to Male S.P.S.



No. 380

Size, In.	Each
3/8	$.60
1/2	1.00
3/4	1.50
1	2.45

Male pipe thread same as listed size.

Bulkhead Fittings
Copper to Copper

No. 330

Size, In.	Each
1/4	$.55
3/8	.70
1/2	1.05
5/8	1.45
3/4	1.80
1	3.05
1 1/4	4.55
1 1/2	7.90
2	10.25

Terminal Fittings
Copper to Female S.P.S.

No. 319

Size, In.	Each
3/8	$.60
1/2	.70
5/8	.85
3/4	1.00
1	1.75
1 1/4	2.75
1 1/2	3.80
2	5.45

Male pipe thread on sleeve nut increased one size.

Crosses
Copper to Copper to Copper to Copper

No. 335

Size, In.	Each
1/4	$1.20
3/8	1.20
1/2	1.50
3/4	2.35
1	4.05
1 1/4	6.60
1 1/2	10.25
2	15.75

Return Bends
Copper to Copper

No. 338

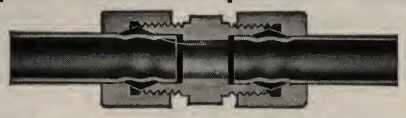
Size, In.	Each
3/8	$1.35
1/2	1.50
3/4	1.90
1	2.80
1 1/4	5.15
1 1/2	6.60
2	10.95

Washtray Tees
Copper to Copper to Female S.P.S.

No. 337

Size, In.	Each
1/2	$1.90

Imperial Brass Compression Fittings



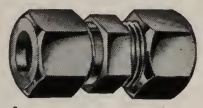
No. 60-F Sleeves

O.D. of Tube Inches	Per 100	Std. Pkg.
1/8	$2.00	50
5/32	2.50	15
3/16	2.00	100
1/4	2.00	100
5/16	2.50	100
3/8	3.50	50
7/16	6.50	15
1/2	10.50	15
5/8	14.50	10
3/4	21.00	..

No. 61-F Nuts

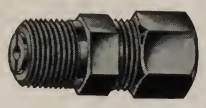
O.D. of Tube Inches	Per 100	Std. Pkg.
1/8	$5.00	15
5/32	7.00	10
3/16	5.50	15
1/4	6.00	25
5/16	8.00	25
3/8	10.00	15
7/16	18.00	10
1/2	21.00	10
5/8	31.00	5
3/4	38.50	..

No. 62-F Unions



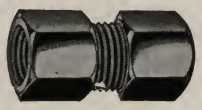
O.D. of Tube Inches	*Per 100	Std. Pkg.
1/8	$22.00	10
5/32	28.00	5
3/16	23.00	10
1/4	25.00	15
5/16	31.00	15
3/8	39.00	10
7/16	73.00	5
1/2	95.00	10
5/8	145.00	5
3/4	209.00	..

No. 63-F Check Valves



O.D. of Tube Inches	*Per 100	Pipe Thread Inches	Std. Pkg.
1/8	$33.00	1/8	5
3/16	34.00	1/8	5
1/4	36.00	1/8	5
5/16	39.00	1/8	5
3/8	52.00	1/4	5
1/2	123.00	3/8	5

No. 66-F Female Couplings



O.D. of Pipe Inches	*Per 100	Pipe Thread Inches	Std. Pkg.
1/8	$17.00	1/8	10
3/16	18.00	1/8	10
1/4	20.00	1/8	15
5/16	22.00	1/8	15
3/8	40.00	1/8	10
1/2	86.00	3/8	5
5/8	125.00	1/2	5
3/4	200.00	1/2	..

No. 67-F Female Couplings

O.D. of Tube Inches	*Per 100	Pipe Thread Inches	Std. Pkg.
3/16	$32.00	1/4	5
1/4	32.00	1/4	10
5/16	40.00	1/4	10
3/8	42.00	1/4	10
7/16	72.00	1/4	5
5/8	125.00	3/8	5

No. 68-F Connections

O.D. of Tube Inches	*Per 100	Pipe Thread Inches	Std. Pkg.
1/8	$14.00	1/8	10
3/16	15.00	1/8	15
†1/4	17.00	1/8	25
1/4	22.00	1/4	15
†5/16	20.00	1/8	25
5/16	25.00	1/4	15
3/8	31.00	1/8	10
†3/8	$34.00	1/4	15
3/8	58.00	3/8	5
7/16	60.00	1/4	5
1/2	73.00	3/8	10
1/2	94.00	1/2	5
5/8	94.00	1/2	5
3/4	135.00	1/2	..

*Prices include nuts and sleeves.

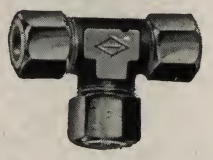
†The same tubing size is furnished in various iron pipe thread sizes. This size is standard.

Imperial Brass Compression Fittings

No. 65-F Elbows

O.D. of Tube Inches	*Per 100	Std. Pkg.
1/8	$34.00	5
3/16	35.00	5
1/4	36.00	10
5/16	45.00	10
3/8	51.00	10
7/16	92.00	5
1/2	109.00	5
5/8	190.00	5
3/4	242.00	..

No. 64-F Tees



O.D. of Tube Inches	*Per 100	Std. Pkg.
1/8	$39.00	5
3/16	40.00	5
1/4	44.00	10
5/16	48.00	10
3/8	70.00	5
7/16	120.00	5
1/2	180.00	5
5/8	251.00	5
3/4	351.00	..

No. 69-F Elbows

O.D. of Tube Inches	*Per 100	Pipe Thread Inches	Std. Pkg.
1/8	$24.00	1/8	10
3/16	25.00	1/8	15
1/4	26.00	1/8	25
1/4	31.00	1/4	15
5/16	32.00	1/8	25
5/16	40.00	1/4	15
3/8	46.00	1/8	10
3/8	49.00	1/4	15
3/8	80.00	3/8	5
7/16	87.00	1/4	5
1/2	106.00	3/8	10
1/2	152.00	1/2	5
5/8	152.00	1/2	5
3/4	198.00	1/2	..

No. 71-F Tees

O.D. of Tube Inches	*Per 100	Pipe Thread Inches	Std. Pkg.
1/8	$32.00	1/8	5
3/16	34.00	1/8	5
1/4	40.00	1/8	10
5/16	44.00	1/8	10
3/8	57.00	1/4	5
7/16	104.00	1/4	5
1/2	158.00	3/8	5
5/8	207.00	1/2	5
3/4	280.00	1/2	..

No. 70-F Elbows

O.D. of Tube Inches	*Per 100	Pipe Thread Inches	Std. Pkg.
1/8	$22.00	1/8	5
3/16	25.00	1/8	5
1/4	28.00	1/8	10
5/16	36.00	1/8	10
3/8	52.00	1/4	5
7/16	73.00	1/4	5
1/2	101.00	3/8	5

No. 72-F Tees

O.D. of Tube Inches	*Per 100	Pipe Thread Inches	Std. Pkg.
1/8	$32.00	1/8	5
3/16	34.00	1/8	5
1/4	40.00	1/8	10
5/16	44.00	1/8	10
3/8	57.00	1/4	5
7/16	104.00	1/4	5
1/2	158.00	3/8	5
5/8	210.00	1/2	5
3/4	280.00	1/2	..

No. 73-F Elbow Check Valves

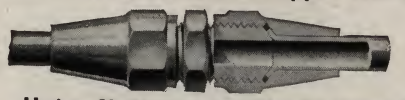
O.D. of Tube Inches	*Per 100	Pipe Thread Inches	Std. Pkg.
1/8	$45.00	1/8	5
3/16	47.00	1/8	5
1/4	50.00	1/8	5
5/16	56.00	1/8	5
3/8	72.00	1/4	5

No. 76-F Male and Female Tees

O.D. of Tube Inches	*Per 100	Pipe Thread Inches	Std. Pkg.
1/8	$40.00	1/8	5
3/16	44.00	1/8	5
1/4	48.00	1/8	5
5/16	53.00	1/8	5
3/8	75.00	1/4	5

*Prices of fittings include nuts and sleeves.

Imperial S.A.E. Brass Tube Fittings
For Connecting Brass and Copper Tubing



Union Nuts
No. 41-F

No. 41-F

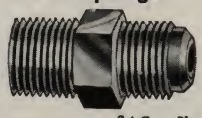
O.D. Tube	Per 100	Std. Lgth.	S.A.E. Thrd.	Std. Pkg.
1/8	$10.00	3/4	5/16x24	10
3/16	11.00	13/16	3/8x24	15
1/4	13.00	15/16	7/16x20	25
5/16	17.00	1 1/8	1/2x20	25
3/8	25.00	1 5/16	5/8x18	15
7/16	34.00	1 1/2	11/16x16	5
1/2	46.00	1 5/8	3/4x16	10
5/8	74.00	1 7/8	7/8x14	5
3/4	101.00	2 3/16	1 1/16x14	..
7/8	250.00	2 5/16	.....	..

No. 41-FS

No. 41FS

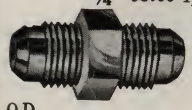
1/8	$9.00	1/2	5/16x24	10
3/16	10.00	5/8	3/8x24	15
1/4	12.00	3/4	7/16x20	25
5/16	15.00	7/8	1/2x20	25
3/8	22.00	1	5/8x18	15
7/16	33.00	1 1/16	11/16x16	5
1/2	40.00	1 1/8	3/4x16	5
5/8	64.00	1 5/16	7/8x14	5
3/4	95.00	1 1/2	1 1/16x14	..

No. 48-F Half Union Couplings



O.D. Tube In.	*Per 100	S.A.E. Thread In.	Pipe Thread In.	Std. Pkg.
1/8	$11.00	5/16x24	1/8	10
3/16	12.00	3/8x24	1/8	15
†1/4	13.00	7/16x20	1/8	25
1/4	22.00	7/16x20	1/4	10
†5/16	17.00	1/2x20	1/8	25
5/16	24.00	1/2x20	1/4	10
†3/8	35.00	5/8x18	1/4	15
3/8	45.00	5/8x18	3/8	10
3/8	32.00	5/8x18	1/8	10
7/16	38.00	11/16x16	1/4	5
1/2	45.00	3/4x16	3/8	5
5/8	90.00	7/8x14	1/2	5
3/4	100.00	1 1/16x14	1/2	..

No. 42-F Union Couplings

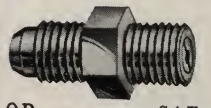


O.D. Tube In.	*Per 100	S.A.E. Thread In.	Std. Pkg.
1/8	$17.00	5/16x24	5
3/16	19.00	3/8x24	10
1/4	21.00	7/16x20	15
5/16	23.00	1/2x20	15
3/8	35.00	5/8x18	10
7/16	45.00	11/16x16	5
1/2	55.00	3/4x16	5
5/8	92.00	7/8x14	5
3/4	130.00	1 1/16x14	..
7/8	300.00	.....	..

No. 49-F Elbows

1/8	$18.00	5/16x24	1/8	10
3/16	19.00	3/8x24	1/8	15
†1/4	20.00	7/16x20	1/8	25
1/4	29.00	7/16x20	1/4	10
†5/16	23.00	1/2x20	1/8	25
5/16	35.00	1/2x20	1/4	10
3/8	41.00	5/8x18	1/8	10
†3/8	44.00	5/8x18	1/4	15
3/8	60.00	5/8x18	3/8	10
7/16	52.00	11/16x16	1/4	5
1/2	60.00	3/4x16	3/8	5
1/2	140.00	.....	1/2	5
5/8	140.00	7/8x14	1/2	5
3/4	190.00	1 1/16x14	1/2	..

No. 43-F Ball Check Valves

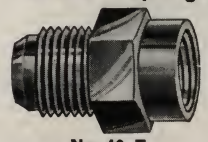


O.D. Tube In.	*Per 100	S.A.E. Thread In.	Pipe Thread In.	Std. Pkg.
3/16	$32.00	3/8x24	1/8	5
1/4	34.00	7/16x20	1/8	5
5/16	38.00	1/2x20	1/8	5
3/8	52.00	5/8x18	1/4	5
7/16	64.00	11/16x16	1/4	5
1/2	75.00	3/4x16	3/8	5

No. 50-F Elbows

3/16	$23.00	3/8x24	1/8	5
1/4	24.00	7/16x20	1/8	10
5/16	28.00	1/2x20	1/8	10
3/8	60.00	5/8x18	1/4	5
7/16	80.00	11/16x16	1/4	5
1/2	110.00	3/4x16	3/8	5
5/8	160.00	7/8x14	3/8	5
5/8	160.00	7/8x14	1/2	5

Female Couplings



No. 46-F

3/16	$16.00	3/8x24	1/8	10
1/4	17.00	7/16x20	1/8	15
5/16	20.00	1/2x20	1/8	15
3/8	32.00	5/8x18	1/4	10
7/16	43.00	11/16x16	1/4	5
1/2	52.00	3/4x16	3/8	5
5/8	112.00	7/8x14	1/2	5
3/4	165.00	1 1/16x14	1/2	..

No. 47-F

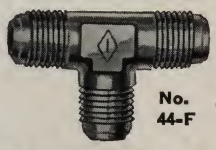
1/4	$24.00	7/16x20	1/4	10
5/16	26.00	1/2x20	1/4	10
3/8	51.00	5/8x18	3/8	5
7/16	55.00	11/16x16	3/8	5
1/2	73.00	3/4x16	1/2	5

No. 55-F Elbows

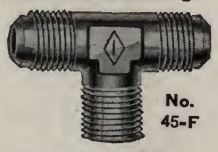
1/4	$24.00	7/16x20	..	10
5/16	25.00	1/2x20	..	10
3/8	40.00	5/8x18	..	5
7/16	60.00	11/16x16	..	5
1/2	65.00	3/4x16	..	5
5/8	140.00	7/8x14	..	5
3/4	200.00	1 1/16x14	..	..

*Prices do not include nuts. †Same tubing size furnished in various iron pipe thread sizes. This size is standard.

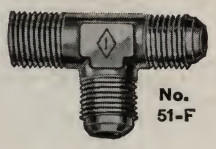
Imperial S.A.E. 3-Way Brass Tees
For Connecting Brass and Copper Tubing



No. 44-F



No. 45-F



No. 51-F

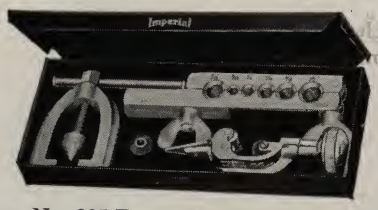
No. 53-F

O.D. Tube In.	*No. 44-F per 100	*No. 45-F per 100	*No. 51-F per 100	*No. 53-F per 100	S.A.E. Thread In.	Pipe Thread In.	Std. Pkg.
1/8	.....	.....	.....	$60.00	5/16 x24	1/8	5
3/16	$26.00	$25.00	$25.00	62.00	3/8 x24	1/8	5
1/4	28.00	27.00	27.00	67.00	7/16 x20	1/8	†10
5/16	35.00	33.00	33.00	70.00	1/2 x20	1/8	†10
3/8	55.00	52.00	52.00	75.00	5/8 x18	1/4	5
7/16	79.00	80.00	80.00	.....	11/16x16	1/4	5
1/2	92.00	88.00	88.00	.....	3/4 x16	3/8	5
5/8	235.00	226.00	226.00	.....	7/8 x14	1/2	5
3/4	300.00	300.00	300.00	.....	1 1/16 x14	1/2	..

*Prices do not include nuts.
†No. 53-F tee sizes 1/4 and 5/16-in. packed 5 in std. pkg.
No. 44-F furnished S.A.E. thread only.

Imperial Flaring and Cutting Tool Kits

Contains the necessary tools for cutting and flaring jobs on copper, brass and aluminum tubing. Packed in a steel box.



No. 225-F. Contains No. 93-F flaring tool for 3/16, 1/4, 5/16, 3/8, 7/16 and 1/2-inch o.d, tubing; No. 174-F tubing cutter for 3/16 to 3/4-inch o.d. tubing; No. 32633 extra cutting wheel.each **$6.00**

No. 1225-F. Same as No. 225-F, except with No. 193-F flaring tool instead of No. 93-F.....each **$6.25**

No. 125-F. Contains No. 93-F flaring tool; No. 94-F tubing cutter and No. 96-F extra cutting wheel..each **$5.50**

No. 1125-F. Contains No. 193-F Flaring Tool; No. 94-F tubing cutter and No. 96-F extra cutting wheel..each **$5.75**

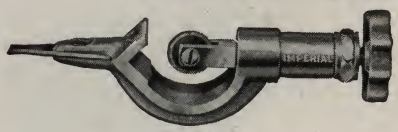
No. 226-F. Consists of No. 95-F flaring tool for 1/4, 5/16, 3/8, 1/2 and 5/8-inch o.d. tubing; No. 174-F roller type tubing, cutter with flare groove for 3/16 to 3/4-inch o.d. tubing; No. 32633 extra cutting wheel.....each **$7.00**

No. 1226-F. Same as No. 226-F except with No. 195-F flaring tool instead of No. 95-F.....each **$7.25**

No. 126-F. Same as No. 226-F, except with No. 94-F tubing cutter instead of No. 174-F.....each **$6.50**

No. 1126-F. Contains No. 195-F flaring tool; No. 94-F tubing cutter and No. 96-F extra cutting wheel..each **$6.75**

No. 94-F Imperial Tube Cutters
Capacity 1/8 to 3/4 Inch O.D.



No. 94-F

No. 96-F

No. 97-F

Makes a quick, clean cut through copper, brass, block-tin, aluminum, Bundyweld steel or lead tubing.

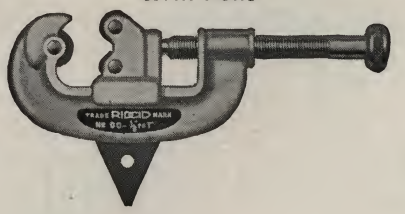
Tubing rests on V.

Has forged brass body and chromium plate finish.

Complete with reamer.

No. 94-F.....each **$2.25**
No. 96-F, Extra Cutting Wheel.....each **.25**
No. 97-F, Extra Reamer Blade.....each **.25**

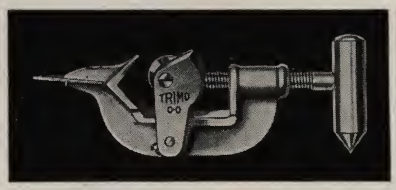
Ridgid Copper and Brass Tubing Cutters
With Rolls



Cuts quickly, no burr.
Rollers smooth tube ready for soldering. Handy integral reamer.

No.	000	00	0
Each	$1.39	1.60	2.88
Capacity, O.D. inches	⅛ to 1	3/16 to 1⅛	½ to 2⅛
Weight pounds	¾	1½	2¼

No. 00 Trimo Tubing Cutters



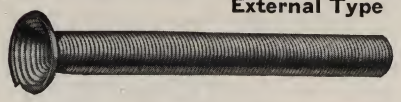
The No 00 Trimo Tubing Cutter is an ideal tool for plumbing, refrigeration, and oil burner trades. It cuts, reams, and flares all tubing up to ¾-inch outside diameter.

Equipped with special sharp thin wheels which make a quick, square right angle cut with practically no burr.

Is silvered with cadmium to prevent rust.

No. 00 ..... each $2.00
Extra Wheels ..... each .25

No. 102-F Imperial Tube Benders
External Type



Bends tubing by hand to any desired shape without collapsing the tube.

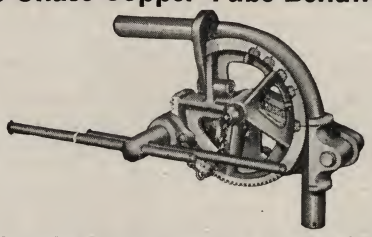
Consists of an especially prepared spring wire coil. Furnished in six sizes to take copper or brass tubing. Cadmium plated to prevent rusting. Belled end assures ease in removing from tubing after bend has been made.

No.	102-F	102-F	102-F	102-F	102-F	102-F
Each	$.25	.30	.35	.40	.45	.50
Size ..... inches	¼	5/16	⅜	7/16	½	⅝
Length .. inches	10	10	10	12	12	12
Wt., Ea. ounces	3	3	4	6¼	6½	8

Sets

No. **101-F**, Set of 6, One of Each ¼, 5/16, ⅜, 7/16, ½, and ⅝-Inch Size ..... per set $2.05
No. **163-F**, Set of 4, One of Each ¼, ⅜, ½, and ⅝-Inch Size ..... per set 1.45

No. 1030 Chase Copper Tube Bending Tools



These tools make smooth, positive bends without danger of crushing or kinking. They are light and durable, being made from materials having high tensile strength, adequately reinforced. They are cadmium plated to resist rust.

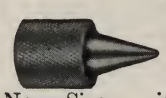
Special clamp is available for holding in a vise.

Nom. Size ..... in.	¼	⅜	½	⅝	¾	1
No. **1030** ..... each	$11.40	11.40	16.65	21.35	21.35	28.50
Ctr. Radius Bend. in..	1¾	1¾	2½	3	3	4

No. 1014A Chase Hardened Steel Underground Service Flanging Tool

Size, Inches	Each	Size, Inches	Each
½	$.65	1¼	$3.60
¾	.80	1½	5.00
1	1.30	2	6.40

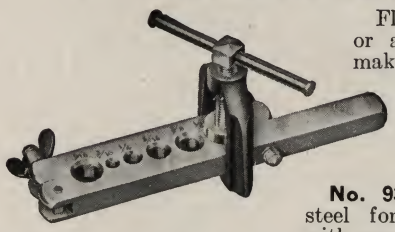
Chase Sizing Tools



Required only when soft tubing is used.
Style 480 is for Type L tube; and Style 481 is for Type K tube.

Nom. Size ..... in.	⅜	½	⅝	¾	1	1¼	1½	2
Act. Size ..... in.	½	⅝	¾	⅞	1⅛	1⅜	1⅝	2⅛
Style **480** ..... No.	2084	2085	2240	2086	2087	2088	2089	2090
Style **481** ..... No.	2091	2092	2239	2093	2094	2095	2096	2097
Each	$1.50	1.60	2.00	2.30	3.30	6.25	7.65	10.75

Imperial Flaring Tools



Flares, copper, brass or aluminum tubing to make up S.A.E. joints without cracking or splitting. Also ordinarily may be used to flare Bundy steel tubing.

No. 93-F. Yoke made of steel forging and furnished with cone which rotates with the screw. For 3/16, ¼, 5/16, ⅜, 7/16, and ½-inch tubing. ea. $3.00

No. 93-FS. Same as No. 93-F, except furnished with swivel cone which remains stationary while screw is turned. ea. $3.25

No. 95-F. Yoke made of steel forging and furnished with cone which rotates with the screw. Specially designed for sizes used in electrical refrigerator work—¼, 5/16, ⅜, ½, and ⅝-inch tubing ..... each $4.00

No. 95-FS. Same as No. 95-F, except furnished with swivel cone which remains stationary, while screw is turned. ea. $4.25

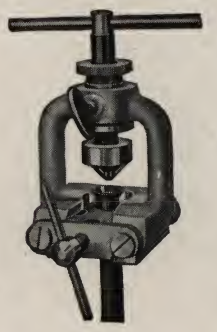
No. 103-F. Yoke furnished with cone which rotates with the screw. For air conditioning and plumbing work—sizes ¾, ⅞, and 1-in. tubing ..... each $5.00

No. 175-F. Wide range type. Yoke made of steel forging. For 3/16, ¼, ⅜, ½, ⅝ and ¾-inch tubing ..... each $4.85

Extra Parts

No.	Description	Each
24455	Yoke for No. 93-F	$1.25
24455	Yoke for No. 95-F	1.25
28361	Yoke for No. 103-F	2.25
32638	Yoke for No. 175-F	1.95
30077	Bar for Nos. 93-F and 93-FS	1.90
30231	Bar for Nos. 95-F and 95-FS	2.95
28360	Bar for No. 103-F	3.00
32641	Bar for No. 175-F	3.25
24461	Wing Nut	.15
25384	Compressor Cone for Nos. 93-F and 95-F	.25

Imperial Flaring and Burnishing Tools
For Copper, Brass, or Aluminum Tubing

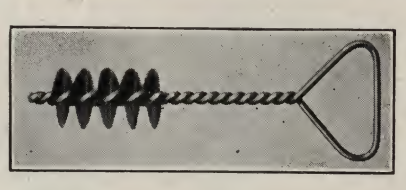


Three hardened rollers spin out the tube to a soft flare and burnish the seat in one operation.

The sound construction and precise moving parts assure a true fit with the male seat of the fitting.

No. **155-F**, Complete with 1 Set of Jaws for ¼, ⅜, ½, and ⅝-Inch Tubing ..... each $6.75
No. **154-F**, Complete with 1 Set of Jaws for ¼, 5/16, 7/16, and ½-Inch Tubing ..... each 6.75
No. **156-F**, 1 Set Jaws Only for No. 155-F Tool ..... each 1.25
No. **157-F**, 1 Set Jaws Only for No. 154-F Tool ..... each 1.25

Royal Worcester Copper Fittings Brushes



For cleaning and polishing copper fittings.

Made from high grade, tempered steel brush wire in spiral construction, solidly held by galvanized double twisted wire handle.

For Copper Fittings...in.	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Each.....	....	....	....	....	....	....	....

Royal Worcester Copper Tubing Brushes

For cleaning and polishing copper tubing preparatory to use with solder or sweat fittings.

Made from high grade, tempered steel brush wire. Has painted red wooden handle.

For Copper Tubing.....inches	3/8	1/2	3/4	1
Each.....	....	....	....	....

Style 60 Dresser Bell Joint Clamps

The purpose of a bell joint clamp is to permanently, effectively, and economically repair or recondition a bell and spigot joint which is leaking under existing operating conditions.

Follower ring, anchor ring, clips and fillers are of highest quality malleable iron. Bolts regularly furnished are of high grade steel with rolled threads.

Features: Uniformly distributed gasket pressure; continuous gasket recess; a special Dresser oil-resisting rubber gasket; adjustability in both follower and anchor rings; heavy construction reducing distortion to a minimum; correct distribution of metal.

Suitable for the following sizes of standard bell and spigot cast iron pipe: A.G.A. pipe—4 to 48 inches inclusive; A.W.W.A pipe—Classes A and B, 3 to 60 inches inclusive; Class C, 3 to 30 inches inclusive; Class D, 3 to 12 inches inclusive. Clamps for special or odd sizes of pipe will be manufactured as required. Standard sizes will accommodate many variations. Prices upon application.

Behr-Manning Adalox Cloth

For Finishing Solder Fittings In 50-Yard Rolls

Coated with aluminum oxide, an electric furnace abrasive. This is the hardest, toughest abrasive and is exceptionally well adapted for work on solder.

Grains are scientifically spaced with openings or clearances between them to prevent sanded particles of metal from filling up and glazing over cutting face. Backing is pliable to permit finishing small curved surfaces and intricate corners and spaces. A fast cutting, long wearing cloth. Width, 1½ inches.

Grade No. 3/0.....per roll **$3.55**

Model JC Skinner-Seal Pipe Joint Clamps

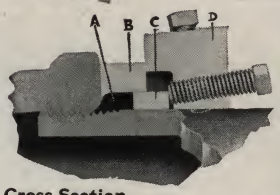
For stopping leaks at joints where pipe is screwed into fitting. Put on quickly without interrupting service, making a permanent repair under any operating conditions, any pressure, or temperature. Effective on steam, oil, gas, ammonia, and brine leaks. Used by oil refineries on pressures up to 2000 pounds to the sq. in.

Made of malleable iron. When used on extremely high temperatures, specify so proper gasket is sent.

Note in cross-section illustration how gasket is forced directly into threads, stopping leak at source for permanent repair. A, gasket; B, gasket container ring; C, sliding push ring; D, stationary main ring.

For special screwed fittings (lipped for lead, recessed, or cast iron) specify special joint clamp.

Wrench furnished with each clamp from 2 inches up.

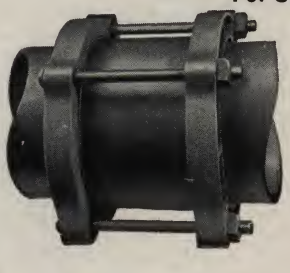


Cross Section

I.D. Pipe Inches	Each	Wt. Lb.	I.D. Pipe Inches	Each	Wt. Lb.	O.D. Pipe Inches	Each	Wt. Lb.
1/2	$1.50	1	6	$9.00	8	12	$22.50	19
3/4	1.50	1	6 O.D.	9.00	8 1/4	12 O.D.	22.50	19
1	1.50	1 1/4	6 5/8 or 7 O.D.	10.50	7 1/2	12 1/2 Cas. 13 O.D.	27.50	17 3/4
1 1/4	1.90	2 1/2						
1 1/2	2.25	2 1/2	7	10.50	7 3/4	14 O.D.	31.50	20
2	3.00	2 3/4	8 O.D.	13.00	11 1/2	15 O.D.	33.75	20 1/2
2 1/2	3.75	3 1/8	8	13.00	13	16 O.D.	36.00	26 1/4
3	4.50	4 1/2	9 O.D.	15.75	13 1/2	17 O.D.	38.00	27 1/4
3 1/2	5.25	5 1/4	9	15.75	12 3/4	18 O.D.	40.50	25 1/2
4	6.00	6	10 O.D.	18.75	14 1/2	20 O.D.	45.00	35
4 1/2	6.75	5 1/4	10	18.75	14 1/2	22 O.D.	55.00	37
5 or 5 3/16 Casing	7.50	6	11 O.D.	19.50	15	24 O.D.	65.00	56 3/4
			11	21.50	17 1/4	....	.....	....

Style 41 Dresser Collar Clamps

For Steel Pipe



Designed to stop leaks at ends of screw collars on oil or gas lines without removing pipe. With 4 steel bolts.

I.D. Inches		Complete Each	No. and Size Bolts In.	Wt. Lb.
4 1/2	Pipe	$4.27	4-5/8x 8	18
4 3/4	Cas.	4.25	4-5/8x 7	18
5	Cas.	4.29	4-5/8x 7 1/2	19
5	Pipe	4.49	4-5/8x 8 1/2	20
5 3/16	Cas.	4.33	4-5/8x 7 1/2	19
5 5/8	Cas.	4.71	6-5/8x 7 1/2	22
6	Pipe	5.21	6-5/8x 8 1/2	23
6 1/4	Cas.	5.19	6-5/8x 8	23
6 5/8	Cas.	5.21	6-5/8x 8	23
7 5/8	Cas.	5.74	6-5/8x 8 1/2	26
8	Pipe	6.12	6-5/8x 9 1/2	28
8 1/4	Cas.	6.07	6-5/8x 8 1/2	28
9 5/8	Cas.	6.93	8-5/8x 9 1/2	33
10	Pipe	8.67	8-5/8x10	44
11 5/8	Cas.	9.39	8-5/8x 9 1/2	42
12	Pipe	10.01	8-5/8x10	50

Skinner-Seal Pressed Steel Economy Pipe Clamps

For repairing badly pitted and corroded pipe lines at a minimum cost. Stops leaks instantly and permanently. Later, if desired, the half of clamp which covers the leak can be welded on as a patch, and the other half of the clamp can then be used again.

This is a 3/16-inch thick heavy hot pressed steel plate with inseparable lugs pressed out of the material itself. While heavy enough to outlast the pipe, it still is sufficiently flexible to conform to irregularities on the pipe surface.

Furnished with special crescent-shaped pressure-balancing gasket of soft tire stock, which can be used in single or multiple lengths for small or long leaks.

Made in two widths. Single-bolt width, 3½ inches wide, for pit holes, complete with rubber cone plug riveted in. Two-bolt width, 6½ inches wide, for running corrosion spots, complete with strip gasket.

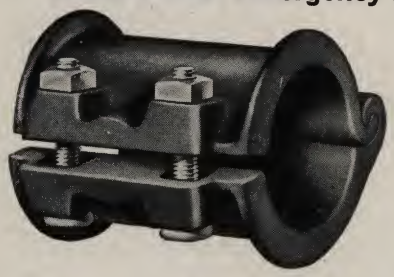
Clamps are enameled; bolts are electro-plated.

Pipe Size In.	Narrow Each	Wide Each	Narrow Wt. Lb.	Wide Wt. Lb.	Pipe Size In.	Narrow Each	Wide Each	Narrow Wt. Lb.	Wide Wt. Lb.
4	$1.25	$1.75	3¾	7¼	15	$2.55	$3.80	9¾	17¾
6	1.40	2.00	5	8¾	16	2.70	4.20	10¼	18¾
8	1.60	2.30	5¾	10⅞	18	3.00	4.60	11⅜	21¼
10	1.80	2.60	7⅛	13⅞	20	3.30	5.00	12⅞	23¼
12	2.10	3.00	8¼	15¾	24	3.60	5.40	14⅞	27⅜
14	2.40	3.40	9	17¼	..	....	....	....	....

Extra Cone Plugs

No.	1	2	3
Each	$.06	.08	.10
Diameter...inches	1 9/16	2 3/16	3½

Skinner-Seal Emergency Pipe Clamps



For stopping leaks in pipe lines. Malleable iron cylinder, halved, hinged along one side, and fitted with bolts on the other. A gasket completes the clamp. By concentration of pressure on the leak, this clamp makes a permanent repair.

Owing to the long open hinge, the two halves of the clamp may be slid together along the pipe so as to assemble the clamp when crowded for room.

For the larger sizes of pipe, clamps are reinforced with heavy ribs, which insure security under high pressure.

Enameled to resist rust. Furnished with gaskets and electro-plated bolts.

Specify when O.D. or cast iron pipe sizes.

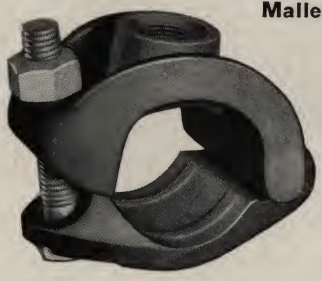
Sizes ½ to 2-inch packed 12 in a carton; sizes 2½ to 4-inch, 6 in a carton.

Size Pipe In.	Each	Length Over All Inches	No. Bolts	Weight Pounds Each	Size Pipe In.	Each	Length Over All Inches	No. Bolts	Weight Pounds Each
½	$.60	3¼	2	1¼	5	$7.50	7⅛	3	14½
¾	.68	3¼	2	1½	6	9.00	8	3	17⅝
1	.75	3½	2	1¾	*6	9.00	8	3	16⅛
1¼	.90	3¾	2	2⅝	7	10.50	8⅞	3	21⅜
1½	1.05	4	2	3	8	12.00	9⅞	3	30¼
2	1.20	4¼	2	3¾	*8	12.00	9¾	3	30½
2½	1.50	4½	2	4½	9	13.50	10⅛	3	37
3	1.88	4¾	2	5¾	10	15.00	11⅞	4	46¼
3½	2.25	5⅜	2	6⅞	*10	15.00	12	4	51
4	3.00	6	2	9⅞	12	18.00	12	4	58⅝
*4	5.25	6½	3	10⅞	*12	18.00	12	4	61¼
4½	5.25	6½	3	10⅞	..	.....	....	.	....

*Cast iron.

Model SS Skinner-Seal Service Saddles

Malleable Iron



Showing Gasket Riveted in Place

For service connections on gas, oil and water lines. Made of malleable iron, the improved design without straps, is of utmost simplicity and strength.

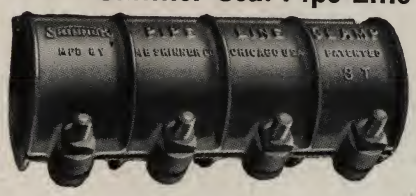
In ordering, specify exact size that saddles are to be tapped. Special threads at no extra charge.

Saddle is lacquered, complete with bolt and lead gasket.

Size, In.	Tapped In.	Wt. Lb.	Each	Size, In.	Tapped In.	Wt., Lb.	Each
1¼	½ to 1	1⅞	$.90	6⅝	½ to 2	14½	$6.00
1½	½ to 1	2½	.95	Casing 7 O.D.	2 Mueller, 2½, 3 A.P.I.	16¼	6.50
2	½ to 1¼	3⅝	1.00				
2C.I.	½ to 1½	3¾	1.35	6 C.I.			
*2	½ to 1½	4¾	1.35	8O.D.	½ to 3	26⅛	7.00
2½	½ to 1½	4¼	1.35	8	½ to 1¼	23½	7.00
3	½ to 1¼	5⅜	1.50	8	1½, 2	26½	7.00
3	1½, 2	6⅛	1.75	8	†	29¾	7.50
3C.I.	½ to 1¼	5⅜	2.20	8C.I.	½ to 2	23½	8.50
3C.I.	1½, 2	5⅝	2.35	8C.I.	†	29¾	9.00
4	½ to 1¼	5¾	2.00	10	½ to 2	26	10.50
4	1½, 2	7	2.50	10	†	39¼	12.50
4C.I.	½ to 1¼	6½	3.00	10C.I.	½ to 2	26	10.50
4C.I.	1½, 2	7⅜	3.25	10C.I.	†	39¼	12.50
5	½ to 2	13¾	4.50	12	½ to 2	30¾	15.00
6O.D.	½ to 2	13⅝	4.75	12	†	32½	17.50
6	½ to 1¼	12¼	5.00	12C.I.	½ to 2	30¾	15.00
6	1½, 2, 2½	13⅛	5.00	12C.I.	†	32½	17.50

*Transite. Larger sizes made to order.
†2-inch Mueller, 2½, 3, 3½, 4-inch A.P.I.

Skinner-Seal Pipe Line Clamps



Will take care of long splits or bad corrosion. For high pressure work

Made of malleable, iron heavily lacquered.

Clamps furnished with 4 bolts.

Size Pipe In.	Each	Lgth. In	Wt. Lb.	Size Pipe In.	Each	Lgth. In.	Wt. Lb.
¾	$1.35	7½	2⅞	3	$4.70	11	16¼
1	1.50	7⅞	3¼	3½	5.50	11½	13⅞
1¼	2.00	8½	4¼	4	6.50	12	18⅜
1½	2.50	9	4¼	4½	10.75	12½	20⅝
2	3.00	9⅞	8⅜	5	12.00	13	24
2½	3.75	11	10¾	6	13.50	14	34

Pipe Nipple Assortments

In Cartons

I.P. Size..inches	⅜	½	½	¾	¾	1	1¼	1½	2
Black.per carton	...	...	...	...	...	...	...	...	...
Galv..per carton	...	...	...	...	...	...	...	...	...
Total Pieces....	100	25	100	25	100	75	50	50	50
	No. of Nipples per Carton								
Length, Inches: Close.....	20	..	20	..	20	15	15	15	15
1⅛.....	..	4	..	4	..	..	..	..	..
1½.....	20	3	20	3	20	..	..	..	..
2	20	3	20	3	20	15	..	..	..
2½.....	15	3	15	3	15	10	10	10	10
3	8	2	8	2	8	12	8	8	8
3½.....	4	2	4	2	4	5	5	5	5
4	5	2	5	2	5	5	4	4	4
4½.....	2	1	2	1	2	4	3	3	3
5	2	2	2	2	2	3	2	2	2
5½.....	2	1	2	1	2	3	2	2	2
6	2	2	2	2	2	3	1	1	1

Close Nipple

Short Nipple

Pipe Nipples

Lists apply to **standard** wrought steel, close, short, long, and tank nipples.

Nipples made from genuine wrought Iron or Copper bearing pipe, prices upon application.

For list of black nipples made from **extra strong pipe,** double the list of black nipples. For list of black nipples made from **double extra strong pipe,** multiply price of standard black nipples by 4. For list of galvanized nipples made from extra strong pipe, add list of standard black nipples to list of standard galvanized nipples.

For price on Butt Nipples, add 20% to price of short nipples.

For list of lengths not listed (under 12 inches), use list of next longer length. For list of lengths over 12 to 24 inches, add prices of the two nearest equal lengths.

*Tank nipples are 6 inches long, standard pipe thread on one end, American Standard Locknut Thread 4 inches long on other end.

Long Nipple

*Tank Nipple

Standard Black Right Hand Nipples—Each

Diam. In.	Length Inches Close	Length Inches Short	Close	Short	2	2½	3	3½	4	4½	5	5½	*6	7	8	9	10	11	12
					Length, Inches—Long														
⅛	¾	1½	$.05	$.06	$.07	$.08	$.08	$.09	$.09	$.10	$.11	$.12	$.13	$.14	$.15	$.16	$.17	$.18	$.20
¼	⅞	1½	.05	.06	.07	.08	.08	.09	.09	.10	.11	.12	.13	.14	.15	.16	.17	.18	.20
⅜	1	1½	.05	.06	.07	.08	.08	.09	.09	.10	.11	.12	.13	.14	.15	.16	.17	.18	.20
½	1⅛	1½	.06	.07	.08	.09	.09	.10	.10	.11	.12	.13	.14	.15	.17	.19	.21	.23	.25
¾	1⅜	2	.08	.09	....	.10	.11	.12	.13	.14	.15	.16	.17	.19	.21	.23	.25	.27	.29
1	1½	2	.10	.11	....	.13	.14	.15	.16	.17	.18	.19	.20	.24	.27	.30	.32	.35	.38
1¼	1⅝	2½	.13	.15	....	....	.16	.18	.20	.22	.24	.26	.28	.32	.36	.40	.44	.48	.52
1½	1¾	2½	.16	.18	....	....	.20	.22	.25	.27	.29	.31	.34	.38	.43	.47	.52	.56	.60
2	2	2½	.21	.24	....	....	.28	.31	.34	.37	.40	.44	.48	.53	.59	.66	.78	.80	.87
2½	2½	3	.39	.45	....	....	....	.58	.63	.68	.73	.78	.85	.94	1.03	1.12	1.22	1.31	1.40
3	2⅝	3	.54	.59	....	....	....	.65	.73	.81	.89	.96	1.04	1.19	1.34	1.50	1.65	1.80	1.95
3½	2¾	4	.72	.98	....	....	....	....	....	1.06	1.14	1.21	1.29	1.45	1.61	1.76	1.92	2.08	2.24
4	2⅞	4	.92	1.12	....	....	....	....	....	1.28	1.38	1.48	1.60	1.80	2.00	2.20	2.40	2.60	2.80
5	3	4½	1.60	2.00	....	....	....	....	....	....	2.05	2.17	2.29	2.61	2.91	3.15	3.39	3.64	3.88
6	3⅛	4½	2.00	2.45	....	....	....	....	....	....	2.58	2.73	2.90	3.36	3.68	4.08	4.31	4.60	4.94
8	3½	5	4.30	4.87	....	....	....	....	....	....	....	5.00	5.44	5.71	6.10	6.48	6.85	7.25	7.65
10	3⅞	5	5.88	6.50	....	....	....	....	....	....	....	....	....	....	8.00	8.55	9.10	9.65	10.20
12	4½	6	7.40	8.70	....	....	....	....	....	....	....	....	....	....	10.00	10.90	11.80	12.70	13.60

Standard Black Right and Left Nipples—Each

⅛	¾	1½	$.07	$.08	$.10	$.11	$.11	$.12	$.12	$.13	$.15	$.16	$.17	$.19	$.20	$.21	$.23	$.24	$.26
¼	⅞	1½	.07	.08	.10	.11	.11	.12	.12	.13	.15	.16	.17	.19	.20	.21	.23	.24	.26
⅜	1	1½	.07	.08	.10	.11	.11	.12	.12	.13	.15	.16	.17	.19	.20	.21	.23	.24	.26
½	1⅛	1½	.08	.10	.11	.12	.12	.13	.13	.15	.16	.17	.19	.20	.23	.25	.28	.30	.33
¾	1⅜	2	.11	.12	....	.13	.15	.16	.17	.19	.20	.21	.23	.25	.28	.30	.33	.36	.38
1	1½	2	.13	.15	....	.17	.19	.20	.21	.23	.24	.25	.26	.32	.36	.39	.42	.46	.50
1¼	1⅝	2½	.17	.20	....	....	.21	.24	.26	.29	.32	.34	.37	.42	.47	.52	.58	.63	.68
1½	1¾	2½	.21	.24	....	....	.26	.29	.33	.36	.38	.41	.45	.50	.56	.62	.68	.73	.78
2	2	2½	.28	.32	....	....	.37	.41	.45	.49	.52	.58	.63	.69	.77	.86	.95	1.04	1.14
2½	2½	3	.51	.59	....	....	....	.76	.82	.89	.95	1.02	1.11	1.23	1.34	1.46	1.59	1.71	1.82
3	2⅝	3	.71	.77	....	....	....	.85	.95	1.06	1.16	1.25	1.36	1.55	1.75	1.95	2.15	2.34	2.54
3½	2¾	4	.94	1.28	....	....	....	....	....	1.38	1.49	1.58	1.68	1.89	2.10	2.29	2.48	2.71	2.92
4	2⅞	4	1.20	1.46	....	....	....	....	....	1.67	1.80	1.93	2.08	2.34	2.60	2.86	3.12	3.38	3.64

Standard Galvanized Right Hand Nipples—Each

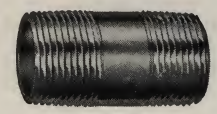
⅛	¾	1½	$.07	$.08	$.10	$.11	$.12	$.13	$.14	$.15	$.16	$.17	$.19	$.22	$.25	$.28	$.30	$.33	$.36
¼	⅞	1½	.07	.08	.10	.11	.12	.13	.14	.15	.16	.17	.19	.22	.25	.28	.30	.33	.36
⅜	1	1½	.07	.08	.10	.11	.12	.13	.14	.15	.16	.17	.19	.22	.25	.28	.30	.33	.36
½	1⅛	1½	.08	.09	.11	.12	.13	.14	.15	.16	.17	.18	.20	.23	.26	.29	.32	.35	.38
¾	1⅜	2	.10	.12	....	.13	.14	.16	.18	.20	.22	.24	.26	.29	.32	.35	.39	.42	.45
1	1½	2	.13	.15	....	.18	.20	.22	.24	.26	.28	.30	.34	.38	.42	.46	.50	.54	.58
1¼	1⅝	2½	.17	.22	....	....	.26	.28	.30	.34	.37	.40	.44	.48	.56	.62	.68	.74	.80
1½	1¾	2½	.22	.26	....	....	.30	.34	.38	.42	.45	.48	.52	.58	.65	.73	.80	.87	.94
2	2	2½	.30	.35	....	....	.40	.45	.50	.55	.60	.65	.70	.79	.88	.97	1.06	1.15	1.24
2½	2½	3	.60	.66	....	....	....	.75	.83	.90	.98	1.06	1.14	1.28	1.44	1.60	1.76	1.92	2.08
3	2⅝	3	.80	.87	....	....	....	1.01	1.10	1.20	1.30	1.40	1.50	1.70	1.90	2.10	2.30	2.50	2.70
3½	2¾	4	1.15	1.40	....	....	....	....	....	1.53	1.65	1.78	1.91	2.16	2.41	2.66	2.91	3.16	3.41
4	2⅞	4	1.27	1.60	....	....	....	....	....	1.85	2.00	2.15	2.30	2.60	2.90	3.20	3.50	3.80	4.10
5	3	4½	2.29	2.87	....	....	....	....	....	....	3.01	3.21	3.40	3.95	4.35	4.73	5.12	5.52	5.90
6	3⅛	4½	2.86	3.56	....	....	....	....	....	....	3.79	4.03	4.30	5.00	5.52	6.03	6.53	7.05	7.54
8	3½	5	5.52	6.37	....	....	....	....	....	....	....	6.65	6.95	7.55	8.15	8.75	9.35	9.95	10.60

Standard Galvanized Right and Left Nipples—Each

⅛	¾	1½	$.12	$.13	$.16	$.18	$.18	$.20	$.20	$.21	$.24	$.26	$.28	$.31	$.32	$.34	$.35	$.39	$.42
¼	⅞	1½	.12	.13	.16	.18	.18	.20	.20	.21	.24	.26	.28	.31	.32	.34	.35	.39	.42
⅜	1	1½	.12	.13	.16	.18	.18	.20	.20	.21	.24	.26	.28	.31	.32	.34	.35	.39	.42
½	1⅛	1½	.13	.16	.18	.20	.20	.21	.21	.24	.26	.28	.31	.32	.35	.40	.45	.48	.53
¾	1⅜	2	.18	.20	...	.21	.24	.26	.28	.31	.32	.34	.35	.40	.45	.48	.53	.58	.61
1	1½	2	.21	.24	....	.28	.31	.32	.34	.35	.39	.40	.42	.52	.58	.63	.68	.74	.80
1¼	1⅝	2½	.28	.32	....	....	.34	.39	.42	.47	.52	.55	.60	.68	.76	.84	.93	1.01	1.09
1½	1¾	2½	.34	.39	....	....	.42	.47	.53	.58	.61	.66	.72	.80	.90	1.00	1.09	1.17	1.25
2	2	2½	.45	.52	....	....	.60	.66	.72	.79	.84	.93	1.01	1.11	1.24	1.38	1.52	1.67	1.83
2½	2½	3	.82	.95	....	....	....	1.22	1.32	1.43	1.52	1.64	1.78	1.97	2.15	2.34	2.55	2.74	2.92
3	2⅝	3	1.14	1.24	....	....	....	1.36	1.52	1.70	1.86	2.00	2.18	2.48	2.80	3.12	3.44	3.75	4.07
3½	2¾	4	1.51	2.05	....	....	....	....	....	2.19	2.39	2.53	2.69	3.03	3.36	3.67	3.97	4.34	4.68
4	2⅞	4	1.92	2.34	....	....	....	....	....	2.68	2.88	3.09	3.33	3.75	4.16	4.48	5.00	5.41	5.83

Standard Brass Nipples

No. 651, Close



No. 653, Long

Size In.	Close Each	Close Lgth. In.	Long 1½	2	2½	3	3½	4	4½	5	5½	6	7	8	9	10	11	12
			Length, Inches															
⅛	$.11	¾	$.13	$.15	$.17	$.19	$.21	$.23	$.25	$.27	$.29	$.31	$.35	$.39	$.43	$.47	$.51	$.55
¼	.13	⅞	.16	.19	.22	.25	.28	.31	.34	.37	.40	.43	.49	.55	.61	.67	.73	.79
⅜	.15	1	.19	.23	.27	.31	.35	.39	.43	.47	.51	.55	.63	.71	.79	.87	.95	1.03
½	.23	1⅛	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.80	.90	1.00	1.10	1.20	1.30
¾	.28	1⅜	...	.35	.42	.49	.56	.63	.70	.77	.84	.91	1.05	1.19	1.33	1.47	1.61	1.75
1	.37	1½	...	.44	.53	.62	.71	.80	.89	.98	1.07	1.16	1.34	1.52	1.70	1.88	2.06	2.24
1¼	.60	1⅝	...	...	.75	.88	1.01	1.14	1.27	1.40	1.53	1.66	1.92	2.18	2.44	2.70	2.96	3.22
1½	.70	1¾	...	...	.90	1.05	1.20	1.35	1.50	1.65	1.80	1.95	2.25	2.55	2.85	3.15	3.45	3.75
2	1.00	2	...	...	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	3.00	3.40	3.80	4.20	4.60	5.00
2½	1.70	2½	...	...	....	2.00	2.30	2.60	2.90	3.20	3.50	3.80	....	....	....	....	....	....
3	2.50	2⅝	...	...	....	2.90	3.30	3.70	4.10	4.50	4.90	5.30	....	....	....	....	....	....
3½	4.00	2¾	...	...	....	....	....	5.40	6.00	6.60	7.20	7.80	....	....	....	....	....	....
4	4.75	2⅞	...	...	....	....	....	6.15	6.85	7.55	8.25	8.95	....	....	....	....	....	....
5	8.50	3	...	...	....	....	....	....	10.60	11.65	12.70	13.75	....	....	....	....	....	....
6	11.50	3⅛	...	...	....	....	....	....	14.10	15.40	16.70	18.00	....	....	....	....	....	....

Extras to Be Added to the Above List

Polished	50%	Right and Left	50%
Nickel Plated	75%	Red Brass (85% Copper)	25%
Chromium Plated	100%	Tinned	75%
Extra Strong	100%	Lengths longer than shown, next higher list.	

No. 205 Blake Malleable Iron Pipe Hangers

Pipe Size In.	Black per 100	Galv. per 100	I.P. Thrd. In.	Bolt Thrd. In.	Wt., Lb. per 100
⅜	$21.50	$23.50	⅛	⅜	16
½	21.50	23.50	⅛	⅜	18
¾	23.50	25.50	⅛	⅜	19
1	24.50	27.00	⅛	⅜	21
1¼	27.00	30.00	¼	½	38
1½	30.00	33.50	¼	½	41
2	32.00	36.00	¼	½	54
2½	39.00	44.00	¼	½	61
3	45.00	51.00	¼	½	94
3½	53.50	63.50	⅜	⅝	113
4	63.50	74.50	⅜	⅝	133
4½	73.50	89.00	⅜	⅝	155
5	88.00	108.00	½	¾	194
6	103.00	130.00	½	¾	206
8	173.00	224.00	½	¾	456
10	318.00	414.00	½	⅞	750

No. 206 Blake Malleable Iron Pipe Hangers

Pipe Size Inches	Black per 100	Galv. per 100	I.P. Thread Inches	Weight Pounds per 100
⅜	$28.00	$33.25	⅛	26
½	28.00	33.25	⅛	28
¾	30.00	35.25	⅛	29
1	31.00	36.75	⅛	31
1¼	35.00	42.00	¼	55
1½	38.00	45.50	¼	58
2	40.00	48.00	¼	71
2½	47.00	56.00	¼	78
3	53.00	63.00	¼	111
3½	63.50	78.50	⅜	144
4	73.50	89.50	⅜	164
4½	83.50	104.00	⅜	186
5	103.00	130.50	½	255
6	118.00	152.50	½	267
8	188.00	246.50	½	507
10	333.00	436.50	½	802

F & M Treasury Department Steel Pipe Hangers

No. 121

Conforms to the U. S. Treasury Department specifications.

No. 121

For use in post offices, etc., for all pipes carrying steam at 15 pounds or over.

No. 122

For all low pressure steam, return, water, air, gas, soil, waste, vent lines and for electric conduit.

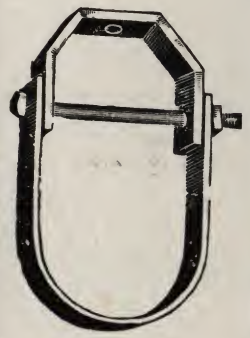
Pipe Size Inches	No. 121 Black with Adjusters per 100	No. 121 Rings Only per 100	No. 121 Size Stock Inches	No. 121 No. of Adjuster	No. 122 Black with Adjusters per 100	No. 122 Rings Only per 100	No. 122 Size Stock Inches	No. 122 No. of Adjuster
½	$25.00	$6.50	¾x⅛	1	$24.50	$6.50	¾x⅛	1
¾	27.00	9.00	1 x⅛	1	24.70	6.70	¾x⅛	1
1	31.00	11.00	1 x⅛	1	25.00	7.00	¾x⅛	1
1¼	32.00	12.00	1 x⅛	1	28.50	8.50	1 x⅛	1
1½	35.00	15.00	1¼x3/16	1	29.00	9.00	1 x⅛	1
2	38.00	18.00	1¼x3/16	1	30.50	10.50	1 x⅛	1
2½	51.00	27.00	1¼x¼	2	33.00	13.00	1 x⅛	2
3	52.00	28.00	1¼x¼	2	35.00	15.00	1¼x⅛	2
3½	59.00	35.00	1¼x¼	2	41.00	17.00	1¼x⅛	2
4	100.00	50.00	1¼x5/16	2	43.00	18.00	1¼x⅛	2
5	125.00	75.00	1½x5/16	3	47.00	23.00	1¼x⅛	2
6	159.00	85.00	2 x5/16	3	80.00	30.00	1¼x3/16	2
8	205.00	125.00	2 x⅜	3	114.00	64.00	1¼x3/16	3
10	290.00	200.00	2 x½	3	210.00	105.00	1½x¼	3
12	315.00	220.00	2 x½	3	280 00	160.00	1½x¼	3

For 14 and 16-inch outside diameter pipe sizes, prices and dimensions upon request.

No. 234 F & M Steel Band Pipe Hangers

Size In.	Per 100 Black	Per 100 Galv.	Size In.	Per 100 Black	Per 100 Galv.
1/2	$5.00	$7.50	3	$13.00	$19.50
3/4	5.25	7.85	3 1/2	16.50	24.75
1	5.75	8.75	4	18.50	27.75
1 1/4	6.25	9.35	5	26.00	39.00
1 1/2	6.50	9.75	6	29.00	42.50
2	10.00	15.00	8	75.00	112.50
2 1/2	12.00	18.00	...	.....	.....

No. 239 F & M Forged Steel Clevis Pipe Hangers



Pipe Size In.	Per 100 Black	Per 100 Galv.	Length Overall In.	Bolt Hole In.
3/4	$23.00	$46.00	2 15/16	9/16
1	24.00	48.00	3 15/16	9/16
1 1/4	28.00	56.00	4 1/4	9/16
1 1/2	30.00	60.00	4 5/8	9/16
2	32.00	64.00	5	9/16
2 1/2	35.00	70.00	5 5/8	9/16
3	46.00	92.00	6 1/4	9/16
3 1/2	58.00	116.00	7	5/8
4	64.00	128.00	7 15/16	5/8
5	74.00	148.00	9 3/16	11/16
6	87.00	174.00	10 3/4	13/16
8	135.00	270.00	12 7/8	7/8
10	300.00	600.00	15 5/8	7/8
12	400.00	800.00	18	7/8
14 O.D.	500.00	1000.00	20	1
16 O.D.	700.00	1400.00	22 5/8	1

No. 930 Modern Adjustable Swivel Hangers

Made of malleable iron.

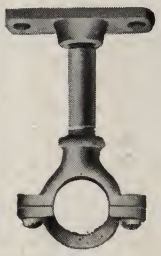
Turn swivel nut to raise or lower the pipe. Can be raised or lowered without removing or raising the pipe from the hanger.

Locknut is used under conditions of excessive vibration. Locknut must be ordered extra.

Specify tapping wanted.

Pipe Size In.	Per 100	Tapping, Inches: For Pipe Thrd.	For Bolt Thrd.	For Spec. Bolt Thrd.	Top of Swivel to Top of Pipe In.	Top of Swivel to Bot. of Pipe In.	Top of Swivel to Ctr. of Pipe In.
3/4	$41.40	1/4	1/2	3/8	1 5/16	3	2 1/2
1	43.40	1/4	1/2	3/8	2	3 3/8	2 11/16
1 1/4	46.40	1/4	1/2	3/8	2	3 5/8	2 13/16
1 1/2	52.40	1/4	1/2	3/8	2	3 7/8	2 15/16
2	58.40	1/4	1/2	3/8	2 1/8	4 1/2	3 5/16
2 1/2	67.20	3/8	1/2	1/2	2 3/4	5 9/16	4 1/8
3	77.20	3/8	1/2	1/2	2 3/4	6 3/16	4 7/16
3 1/2	105.20	3/8	1/2	1/2	2 3/4	6 5/8	4 5/8
4	124.00	3/8	1/2	5/8	2 3/4	7 3/16	4 15/16
5	172.00	3/8	5/8	5/8	3 3/4	9 5/16	6 1/2
6	218.00	3/8	5/8	3/4	3 3/4	10 3/8	7

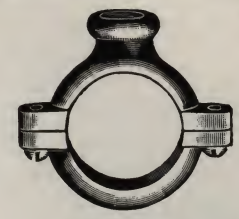
No. 302 F&M Split Ring Extension Pipe Hangers



Rings up to and including 2 inches and larger, malleable iron.

Size In.	Complete: Per 100 Black	Complete: Per 100 Galv.	Wt. Lb.	Less Nipple: Per 100 Black	Less Nipple: Per 100 Galv.	Wt. Lb.
1/4	$33.00	$40.00	51	$26.00	$31.00	40
3/8	33.00	40.00	47	26.00	31.00	36
1/2	34.00	42.00	51	27.00	33.00	40
3/4	36.00	43.00	53	29.00	34.00	42
1	37.00	45.00	66	30.00	36.00	55
1 1/4	42.00	51.00	68	35.00	42.00	57
1 1/2	54.00	66.00	80	47.00	57.00	69
2	67.00	81.00	97	60.00	72.00	86
2 1/2	132.00	141.50	154	124.00	131.50	137
3	149.00	161.00	187	141.00	151.00	170
3 1/2	155.00	166.00	192	146.00	156.00	175
4	158.50	171.00	210	151.00	161.00	193
5	174.50	196.50	370	166.00	186.00	315
6	179.50	201.50	500	171.00	191.00	445
8	272.50	324.50	870	260.00	310.00	815

No. 304 F & M Iron Extension Pipe Hangers



Tapped for 1/4-inch I.P. with 1/2-inch bolt tapping optional.

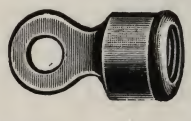
Size Pipe In.	Plain per 100	Galv. per 100	Size Pipe In.	Plain per 100	Galv. per 100
3/8	$16.00	$19.00	1 1/4	$25.00	$30.00
1/2	17.00	21.00	1 1/2	37.00	45.00
3/4	19.00	22.00	2	50.00	60.00
1	20.00	24.00	...	.....	.....

Round Iron for Hangers

Can be furnished in stock sizes and lengths.

Prices upon application.

Malleable Iron Sockets



Specify iron pipe thread or bolt thread.

No.	1	2	3	4	5	6
Per 100	$6.50	7.00	8.50	13.00	18.00	25.00
I. P. Thread....in.	1/8	1/4	3/8	1/2	3/4	1
Bolt Thread....in.	3/8	1/2	5/8	3/4	7/8	1

No. 219 F & M Lag Screws

With Gimlet Point

Rolled on full sized rod; no upset heads are used.

Size No.	Black per 100	Pipe Size Inches	Bolt Size Inches	Length Overall Inches	Weight Pounds per 100
1	$6.50	1/8	..	3 1/2	10
2	8.00	1/4	..	3 1/2	17
3	10.00	3/8	..	4	30
4	15.00	1/2	..	5	62
5	6.50	..	3/8	3 1/2	10
6	12.00	..	1/2	3 1/2	17
7	18.00	..	5/8	4	30
8	24.00	..	3/4	5	62

No. 540 Modern Hanger Adjusters

Made of malleable iron.

Size of eye, 1/4 inch.

Size No.	1-A	1-B	1-C	1-D
Size Bolt Thread ....inches	1/4	3/8	1/2	*1/4
No. 540...per 100	$18.00	18.00	18.00	18.00

*I.P. thread.

Galvanized Pipe Straps

Size....inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Per Pound	...	...	...	...	...	...	...	...
Approx. No...per pound	90	50	45	30	17	13	11	7

No. 221 F&M Steel Extension Bars

Punched from mild steel and cuts easily.

Furnished in either 5 or 10-foot lengths. Specify length when ordering.

Size No.	00	0	1	2	3	4
No. 221...per 100 feet	...	...	...	...	...	...
Width.....inches	¾	¾	⅞	1	1⅛	1¼
Gage No.	18	16	16	14	12	12
Bolt Hole.....inches	¼	¼	¼	¼	5/16	⅜
Hole, Ctr. to Ctr...in	½	½	½	½	½	¾
No. of Feet per Bundle	250	250	250	250	250	100

No. 510 Modern Adjustable Concrete Inserts

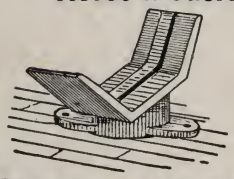
Requires no drilling through floor. Four small nails driven through plate is all that is required to keep it in position while concrete is being poured. Any type hanger can be used in connection with insert.

Made of flat steel.

Size No.	Complete with One Nut per 100	Inserts per 100	Nuts per 100	Thread Nut In.
0	$22.50	$21.00	$2.13	*¼
1	22.50	21.00	2.13	*⅜
1A	22.50	21.00	2.13	*½
1B	22.50	21.00	2.13	†¼
2	26.30	23.30	4.08	*⅝
2A	26.30	23.30	4.08	†⅜

*Bolt thread nut. †Pipe thread nut.

No. 90 Modern Concrete Spot Inserts



Before Concrete is Poured

After Concrete is Poured

A practical malleable iron insert.

For Pipe Thread: Size No.	Each	Pipe Thread Tapping Inches	Diam. Hole Required in False Work Inches	Shipping Weight Pounds per Hd.	For Bolt Thread: Size No.	Each	Bolt Thread Tapping Inches	Diam. Hole Required in False Work Inches	Ship. Wt. Lbs. per Hd.
00	$22.00	⅛	13/16	35	4	$22.00	⅜	13/16	35
0	22.00	¼	13/16	35	5	22.00	7/16	13/16	35
1	28.00	⅜	1	55	6	22.00	½	13/16	35
2	35.00	½	1¼	78	7	28.00	⅝	1	55
3	60.00	¾	1½	128	8	35.00	¾	1¼	78

No. 126 Grinnell 1-Hole Pipe Clamps

Designed for supporting standard conduit, cable or wrought iron and steel pipe on walls or sides of beams.

Made of malleable iron.

Conduit or Pipe Size Nominal I.D. Inches	Black per 100	Galv. per 100	Cable Size or O.D. of Conduit Inches	Diam. Screw Hole Inches	Expansion Case or Screw Anchor Inches
⅜	$3.50	$3.75	.67	¼	3/16x1
½	4.05	4.45	.84	5/16	¼x1½
¾	5.40	5.90	1.05	5/16	¼x1½
1	6.75	7.50	1.31	5/16	¼x1½
1¼	11.50	12.50	1.66	⅜	¼x1½
1½	16.00	17.50	1.90	7/16	⅜x2
2	35.60	38.00	2.37	7/16	⅜x2
2½	63.85	68.00	2.87	11/16	⅝x3
3	87.55	94.00	3.50	11/16	⅝x3
3½	131.00	140.00	4.00	¾	⅝x3½
4	191.50	204.00	4.50	¾	⅝x3½

No. 25 Grabler Wrought Steel I Beam Clamps

No. 25 is made of 1¼x¼-inch steel.

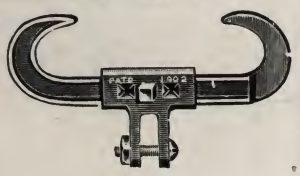
No. 25A is made of 1½x⅜-inch steel.

No. 25B is made of 2x½-inch steel.

	Per 100 — Width I Beam Flange, Inches							Bolt Diam.
No.	2	3	4	5	6	7	8	In.
25	$23.50	$25.00	$25.50	$30.00	$31.00	$36.00	$36.00	⅜
25A	.....	45.00	47.00	49.50	52.00	55.00	57.00	½
25B	.....	82.00	88.00	92.00	96.00	100.00	105.00	¾

Prices of larger sizes on application.

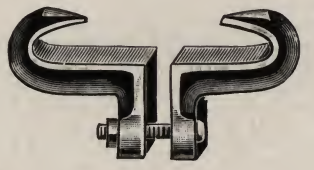
No. 242 F & M Adjustable Malleable Iron Beam Clamps



Designed especially for use with band hangers, but can be used with any hanger by adding socket. Will fit beams 3 to 7 inches.

Price, No. **242**...each **$.60**

No. 248 F & M Malleable Iron Beam Clamps



Composed of two malleable iron castings held together by a bolt and nut. This allows the two sections to be taken apart and placed around the beam.

Size Beam Flange In.	Black per 100	Galv. per 100	Wt. Lb. per 100	Size Beam Flange In.	Black per 100	Galv. per 100	Wt. Lb. per 100
2	$33.00	$38.00	69	4½	$40.00	$47.00	100
2½	33.00	38.00	75	5	43.00	51.00	100
3	36.00	42.00	75	5½	44.00	53.00	100
3½	38.00	45.00	87	6	53.00	62.00	100
4	39.00	46.00	94	7	65.00	75.00	119

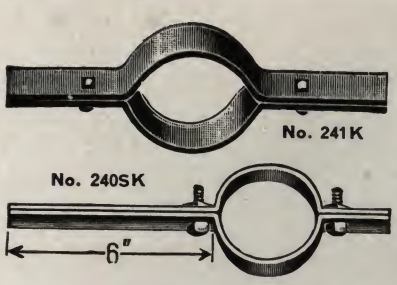
Grinnell Pipe Roll Stands

Designed for supporting piping where adjustment is not necessary, but where provision must be made for expansion and contraction. Two cored holes for anchorage bolts are provided on all sizes for fastening stands to welded steel brackets, structural supports, piers, floors, etc. In addition, there are cored holes at the four corners of the stand, which holes may be used for anchorage purposes by using bolts of proper size.

Made of cast iron.

Size Inches	No. 271 Pipe Roll Stand Complete per 100	No. 272 Pipe Roll and Rod per 100	No. 273 Pipe Roll Only per 100
2–3½	$220.00	$77.00	$60.00
4–6	270.00	92.00	72.00
7–10	390.00	180.00	135.00
12–15	650.00	340.00	270.00
16–20	925.00	475.00	340.00
22–24	1500.00	900.00	630.00
26–30	2750.00	1500.00	965.00

Wrought Iron Riser Clamps



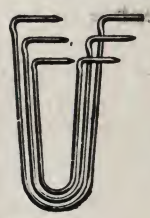
Specifications

Pipe In.	Stock In.	Bolt In.
½ to 5	¼x1¼	⅜
6 & 8	⅜x1½	½
10-14 O.D.	½x2	⅝
16 O.D.	½x2	¾
18 O.D.	½x2½	1
20 O.D.	⅝x3	1⅛

Pipe, In.	Per 100	Pipe, In.	Per 100	Pipe, In.	Per 100	Pipe, In.	Per 100
¾	$41.00	2½	$51.00	6	$120.00	16	$420.00
1	43.00	3	53.00	8	170.00	18	440.00
1¼	45.00	3½	66.00	10	252.00	20	460.00
1½	47.00	4	68.00	12	284.00	..	.....
2	49.00	5	95.00	14	320.00	..	.....

Special clamps of any size iron can be furnished to order.

Reznor Steel Wire Pipe Hooks



In ordering, always specify the length of hook desired, otherwise the shortest, or standard length, will be shipped.

Pipe Size Inches	Price, per 100 — Length, Inches 3	4	6	8	10
⅜	$1.00	$1.15	$1.40	....	....
½	1.10	1.20	1.50	$1.90	....
¾	....	1.30	1.70	2.20	....
1	....	1.50	2.00	2.40	$2.80
1¼	....	1.90	2.50	3.00	3.50
1½	....	....	2.70	3.50	4.00
2	....	....	2.90	4.00	4.50

Cast Iron Hook Plates

No. 736 6-Hook

No. 737, Single Hook

No. of Hooks	For Pipe, Inches 1 — Center to Center, Inches 2½ Each	1¼ — 3 Each	1½ — 3½ Each	2 — 4½ Each
1	$.09	$.10	$.15	$.22
2	.18	.21	.28	.43
3	.23	.27	.43	.65
4	.26	.32	.58	.90
5	.32	.41	.72	1.15
6	.38	.52	.88	1.35

Grinnell Pipe Rolls and Plates

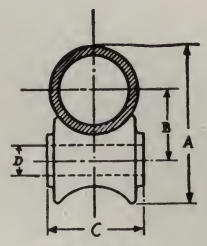
For use in supporting piping when adjustment is not necessary but where provision must be made for expansion and contraction.

No. 277, pipe roll and plate complete; No. 273, pipe roll only.

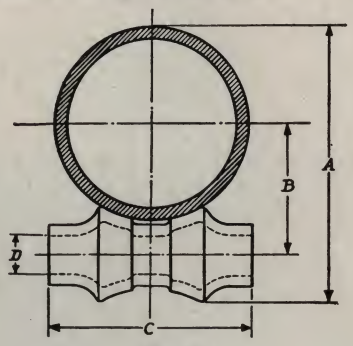
No. 277

Size In.	No. 277 Per 100	No. 273 Per 100
2–3½	$140.00	$60.00
4–6	165.00	72.00
7–10	360.00	135.00
12–15	625.00	270.00
16–20	820.00	340.00
22–24	1325.00	630.00
26–30	2400.00	965.00

No. 750 Modern Pipe Rollers



For Pipe 1 to 1½ Inches



For Pipe 2 to 20 Inches

Made of cast iron.

Pipe Size Inches	Per 100	Dimensions, Inches A	B	C	D Bolt Diameter
1	$13.00	2 7/16	1 1/16	1 7/16	⅜
1¼	13.50	2⅞	1¼	1 13/16	⅜
1½	17.00	3 3/16	1⅜	2	⅜
2	18.00	3⅜	1⅝	2½	⅜
2½	19.00	4⅛	1 15/16	3	½
3	24.00	4 13/16	2 5/16	3⅝	½
3½	43.00	5⅜	2 9/16	4¼	½
4	45.00	6 1/16	2⅞	4¾	½
5	58.00	7 5/16	3 7/16	6	½
6	62.00	8 5/16	4	7	½
8	98.00	10⅝	5 1/16	9¼	⅝
10	130.00	13⅜	7⅜	11½	¾
12	200.00	15⅜	7 5/16	13½	⅞
14 O.D.	400.00	17 7/16	8⅛	14¼	1
16 O.D.	520.00	19⅝	9⅛	16¼	1
18 O.D.	750.00	22	10 5/16	18¼	1⅛
20 O.D.	900.00	24⅜	11⅜	20¼	1¼

Grinnell Pipe Supports

No. 258 Saddle Support

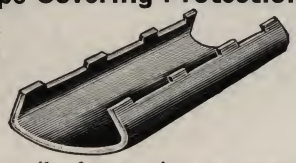
No. 259 Stanchion Saddle

Pipe Size In.	No. 258 per 100	No. 259 per 100	Riser Pipe Size In.	Base Flange Diam. In.
4	$170.00	$580.00	3	9
5	190.00	600.00	3	9
6	250.00	620.00	3	9
8	305.00	780.00	3	9
10	365.00	920.00	3	9
12	425.00	1100.00	3	9
14 O.D.	740.00	1660.00	4	11
16 O.D.	950.00	1920.00	4	11
18 O.D.	1200.00	2120.00	4	11
20 O.D.	2500.00	3700.00	6	13½
24 O.D.	3600.00	5300.00	6	13½
30 O.D.	4800.00	7000.00	6	13½
36 O.D.	7200.00	13,500.00	8	16

Prices cover only the cast iron pipe saddle support and the cast iron pipe stanchion saddle with yoke and nuts, as shown.

Prices on the riser pipe and reducing flange on application.

F & M Pipe Covering Protection Saddles



Designed primarily for service on covered lines where heat losses are to be kept at a minimum, or where the lines are consistantly in use at a very high temperature.

Made of curved steel plate with turned up edges. Length, 12 inches.

Saddle should be filled with either cement or sectional pipe covering cut to fit, before being put into place.

The illustration above is type A. On sizes 12 inches and larger, type B is furnished, as it has a center plate that is welded in to give further support to the pipe.

Made for pipe sizes from 1 to 24 inches o.d.

Prices upon request.

Wrought Washers

U.S. Standard Sizes

Effective October 18, 1938

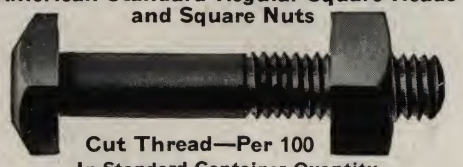
For Bolt Size Inches	200-Lb. Keg per 100 Lb.	O.D. Inches	Size Hole Inches	Thickness Birmingham Gage	Thickness Inches	Approx. No. in 100 Lb.
3/16	$14.00	9/16	1/4	18	3/64	36200
1/4	12.20	3/4	5/16	16	1/16	14900
5/16	11.40	7/8	3/8	16	1/16	11100
3/8	10.50	1	7/16	14	5/64	6700
7/16	9.80	1 1/4	1/2	14	5/64	4100
1/2	9.40	1 3/8	9/16	12	7/64	2600
9/16	9.30	1 1/2	5/8	12	7/64	2200
5/8	9.30	1 3/4	11/16	10	1/8	1300
3/4	9.20	2	13/16	9	5/32	910
7/8	9.20	2 1/4	15/16	8	11/64	652
1	9.20	2 1/2	1 1/16	8	11/64	532
1 1/8	9.20	2 3/4	1 1/4	8	11/64	454
1 1/4	9.20	3	1 3/8	8	11/64	384
1 3/8	9.20	3 1/4	1 1/2	7	3/16	300
1 1/2	9.20	3 1/2	1 5/8	7	3/16	260
1 5/8	9.50	3 3/4	1 3/4	7	3/16	227
1 3/4	9.50	4	1 7/8	7	3/16	200
1 7/8	9.50	4 1/4	2	7	3/16	176
2	9.50	4 1/2	2 1/8	7	3/16	159
2 1/4	10.50	4 3/4	2 3/8	5	7/32	121
2 1/2	10.50	5	2 5/8	4	15/64	104
2 3/4	11.50	5 1/4	2 7/8	3	1/4	91
3	12.50	5 1/2	3 1/8	2	9/32	77

Special Bulletins

It is impossible to list in complete detail all lines of standard material, but we will gladly furnish special catalogs, bulletins and prices upon request, covering lines not fully described nor shown in this catalog.

Machine Bolts

American Standard Regular Square Heads and Square Nuts



Cut Thread—Per 100

In Standard Container Quantity

Length Inches	Diameter, Inches 3/16	1/4	5/16	3/8	7/16	1/2	9/16
3/4	$1.10	$1.10	$1.70	$2.25	.....	.....	.....
1	1.15	1.15	1.75	2.35	$3.95	$4.60	$8.10
1 1/4	1.25	1.25	1.80	2.45	4.10	4.80	8.35
1 1/2	1.30	1.30	1.95	2.60	4.25	5.00	8.60
2	1.50	1.50	2.20	2.90	4.55	5.35	9.10
2 1/2	1.70	1.70	2.45	3.20	4.85	5.75	9.60
3	1.85	1.85	2.70	3.50	5.20	6.15	10.10
3 1/2	2.05	2.05	2.95	3.80	5.50	6.50	10.60
4	2.50	2.50	3.15	4.10	5.85	6.85	11.10
4 1/2	2.65	2.65	3.60	4.40	6.15	7.25	11.60
5	2.80	2.80	3.80	4.80	6.50	7.65	12.10
5 1/2	2.95	2.95	4.00	5.10	6.85	8.05	12.60
6	3.10	3.10	4.20	5.40	7.15	8.45	13.10
6 1/2	3.80	3.80	5.10	6.50	9.20	10.15	13.60
7	4.00	4.00	5.35	6.85	9.65	10.60	14.10
7 1/2	4.15	4.15	5.55	7.15	10.10	11.05	14.60
8	4.35	4.35	5.80	7.50	10.55	11.50	15.10
8 1/2	4.50	4.50	6.00	7.80	11.00	11.95	15.60
9	4.70	4.70	6.25	8.15	11.45	12.40	16.10
9 1/2	4.85	4.85	6.45	8.45	11.95	12.85	16.60
10	5.05	5.05	6.70	8.80	12.35	13.30	17.10
11	5.40	5.40	7.15	9.50	13.20	14.70	18.10
12	5.75	5.75	7.60	10.20	14.05	15.60	19.10

Length Inches	Diameter, Inches 5/8	3/4	7/8	1	1 1/8	1 1/4
1	$8.10	.....	.....	.....	.....	.....
1 1/4	8.35	.....	.....	.....	.....	.....
1 1/2	8.60	$10.95	$16.70	$23.25	$42.00	$49.50
2	9.10	11.60	17.60	24.40	43.40	51.15
2 1/2	9.60	12.25	18.50	25.55	44.60	52.80
3	10.10	12.90	19.40	26.70	45.90	54.45
3 1/2	10.60	13.55	20.30	27.85	47.20	56.10
4	11.10	14.20	21.20	29.00	48.50	57.75
4 1/2	11.60	14.85	22.10	30.15	49.80	59.40
5	12.10	15.50	23.00	31.30	51.10	61.05
5 1/2	12.60	16.15	23.90	32.45	52.40	62.70
6	13.10	16.80	24.80	33.60	53.70	64.35
6 1/2	13.60	17.45	25.70	34.75	55.00	66.00
7	14.10	18.10	26.60	35.90	56.30	67.65
7 1/2	14.60	18.75	27.50	37.05	57.60	69.30
8	15.10	19.40	28.40	38.20	58.90	70.95
8 1/2	15.60	20.05	29.30	39.35	60.20	72.60
9	16.10	20.70	30.20	40.50	61.50	74.25
9 1/2	16.60	21.35	31.10	41.65	62.80	75.90
10	17.10	22.00	32.00	42.80	64.10	77.55
11	18.10	23.30	33.80	45.10	66.70	80.85
12	19.10	24.60	35.60	47.40	69.30	84.15

Boldface prices indicate sizes carried in stock at factory; lightface prices indicate non-standard sizes. An extra charge will be made over the prices shown for each of these sizes regardless of quantity ordered.

Std. pkg. quantities: 1/4-in. to 6-in. long, inc., 100; 5/16-in. to 7-in. long, inc., 50; 3/8-in. to 12-in. long, inc., 50; 7/16-in. to 10-in. long, inc., 50; 1/2-in. to 10-in. long, inc.; 50; 1/2-in., 10 1/2-in. to 12-in. long, inc., 50; 9/16-in. and 5/8-in. to 8-in. long, inc., 25.

Special Heads and Styles—Gross Extras to Be Added

Add, per 100 Extra

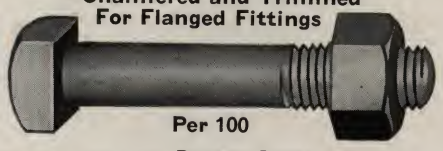
Diameter, Inches 3/16, 1/4	5/16	3/8	7/16	1/2	9/16, 5/8	3/4	7/8	1	1 1/8	1 1/4
American Standard Regular Hexagon Heads										
$.15	.20	.30	.45	.65	1.00	1.40	2.20	3.00	5.00	7.00
American Standard Heavy (U.S.S.) Square Heads										
$.33	.45	.65	.95	1.40	2.10	2.60	3.60	5.20	7.70	10.75
American Standard Heavy (U.S.S.) Hexagon Heads										
$.30	.40	.60	.90	1.30	2.00	2.50	3.50	5.00	7.50	10.50

For Bolts with Nuts Other Than American Standard Regular Square—Gross Extras to Be Added

American Standard Hot Pressed Regular Hexagon Nuts										
$.10	.20	.30	.45	.50	.90	1.30	2.00	2.90	3.80	5.00
American Standard Regular Cold Pressed Square Nuts										
$.10	.20	.30	.45	.50	.90	1.45	2.75	4.25	4.50	5.40
American Standard Heavy (U.S.S.) Hot Pressed Square Nuts										
$.25	.40	.65	.80	.95	1.00	1.30	2.10	2.90	3.10	4.00
Am. Std. Heavy (U.S.S.) Hot Pressed Hexagon Nuts										
$.30	.50	.80	1.00	1.10	1.20	1.70	2.75	3.80	4.00	5.30

Machine Bolts

With Square Heads and American Standard Heavy (U.S.S.) Semi-Finished Hexagon Nuts Chamfered and Trimmed For Flanged Fittings



Per 100

Lgth. In.	Diameter, Inches 3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4
1	$3.35	$6.20	$10.30	.....	.....	.....	.....	.....
1 1/4	3.45	6.40	10.55	.....	.....	.....	.....	.....
1 1/2	3.60	6.60	10.80	$14.25	$21.50	$29.95	.....	.....
2	3.90	6.95	11.30	14.90	22.40	31.10	.....	.....
2 1/2	4.20	7.35	11.80	15.55	23.30	32.25	.....	.....
3	4.50	7.75	12.30	16.20	24.20	33.40	$53.00	$65.15
3 1/2	4.80	8.10	12.80	16.85	25.10	34.55	54.30	66.80
4	5.10	8.45	13.30	17.50	26.00	35.70	55.60	68.45
4 1/2	5.40	8.85	13.80	18.15	26.90	36.85	56.90	70.10
5	5.80	9.25	14.30	18.80	27.80	38.00	58.20	71.75
5 1/2	6.10	9.65	14.80	19.45	28.70	39.15	59.50	73.40
6	6.40	10.05	15.30	20.10	29.60	40.30	60.80	75.05
6 1/2	7.50	11.75	15.80	20.75	30.50	41.45	62.10	76.70
7	7.85	12.20	16.30	21.40	31.40	42.60	63.40	78.35
7 1/2	8.15	12.65	16.80	22.05	32.30	43.75	64.70	80.00
8	8.50	13.10	17.30	22.70	33.20	44.90	66.00	81.65

Brass Stove Bolts

We can furnish Brass Stove Bolts in all sizes.

Prices on application.

Stove Bolts

Flat Head

Round Head

Per 100

Length Inches	Diameter, Inches 5/32	3/16	1/4	5/16	3/8	1/2
3/8	$.57	$.67	....	....	....	.....
1/2	.60	.70	$1.12	....	....	.....
5/8	.63	.73	1.18	....	....	.....
3/4	.66	.76	1.25	$2.12	$2.90	.....
7/8	.68	.79	1.31	2.20	3.00	.....
1	.71	.83	1.38	2.27	3.10	$8.80
1 1/8	.76	.86	1.44	2.34	3.20	9.00
1 1/4	.80	.90	1.51	2.41	3.30	9.20
1 3/8	.84	.96	1.57	2.50	3.40	9.40
1 1/2	.89	1.01	1.64	2.59	3.50	9.60
1 3/4	1.00	1.12	1.80	2.77	3.75	10.00
2	1.11	1.27	1.98	3.00	4.00	10.50
2 1/4	....	1.41	2.16	3.20	4.25	11.10
2 1/2	....	1.59	2.34	3.45	4.55	11.70
2 3/4	....	1.77	2.55	3.70	4.80	12.30
3	....	1.95	2.75	3.95	5.20	13.00
3 1/2	....	2.25	3.10	4.40	5.80	14 40
4	....	2.55	3.45	4.85	6.40	15.80
4 1/2	....	2.85	3.80	5.30	7.00	.....
5	....	3.15	4.15	5.75	7.60	.....
5 1/2	....	3.45	4.50	6.20	....	.....
6	....	3.75	4.85	6.65	....	.....
Deduct for Bolts Less Nuts	.10	.12	.20	.35	.50	.80
Add. for Hex. Nuts	.05	.07	.10	.20	.30	.50
Add for N.P.	.80	.90	1.20	1.50	2.00	3.50

Boldface prices indicate sizes carried in stock at factory. Lightface prices indicate non-standard sizes. An extra charge will be made over the prices shown for each of these sizes regardless of quantity ordered.

Slotted Head Wood Screws

Flat Head

Round Head

Oval Head

Steel Wood Screws—Per Gross

Lgth. In.	Diameter, No. 2	3	4	5	6	7	8	9	10	12	14	16	18
1/4	*$.30	....	*$.32	....	....	....	....	....	....	....	....	....	....
3/8	*.32	†$.34	*.34	*$.34	*$.38	....	....	....	....	....	....	....	....
1/2	*.34	†.36	*.36	*.36	*.40	†$.44	*$.48	....	....	....	....	....	....
5/8	†.36	†.38	*.38	*.40	*.44	†.48	*.52	....	....	....	....	....	....
3/4	....	....	*.40	*.42	*.46	*.50	*.54	†$.58	†$.62	†$.70	....	....	....
7/8	....	....	†.46	†.48	*.52	*.56	*.60	†.64	†.68	†.76	....	....	....
1	....	....	*.48	*.50	*.54	*.58	*.62	†.66	*.70	†.80	†$1.10	‡$1.40	....
1 1/4	....	....	‡.52	‡.54	*.58	*.62	*.66	†.70	*.76	*.92	†1.25	‡1.55	....
1 1/2	....	....	....	....	*.66	*.70	*.75	†.80	*.86	*1.05	†1.35	‡1.70	‡$2.05
1 3/4	....	....	....	....	....	....	†.84	‡.90	*.96	*1.15	†1.50	‡1.90	....
2	....	....	....	....	....	....	†.90	†1.00	*1.10	*1.30	†1.60	†2.00	‡2.40
2 1/4	....	....	....	....	....	....	....	....	‡1.15	‡1.35	‡1.75	....	....
2 1/2	....	....	....	....	....	....	†1.05	‡1.15	*1.25	*1.50	†1.85	†2.40	‡3.00
3	....	....	....	....	....	....	....	....	†1.42	†1.75	†2.25	‡2.80	‡3.40
3 1/2	....	....	....	....	....	....	....	....	‡1.90	‡2.30	‡2.80	‡3.35	‡3.95
4	....	....	....	....	....	....	....	....	....	....	‡3.00	‡3.55	‡4.20

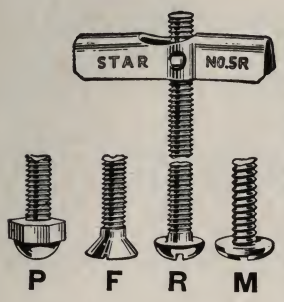
Brass Wood Screws—Per Gross

Lgth. In.	2	3	4	5	6	7	8	9	10	12	14	16	18
1/4	†$.70	....	†$.86	....	....	....	....	....	....	....	....	....	....
3/8	*.76	‡$.82	*.90	....	§$1.10	....	....	....	....	....	....	....	....
1/2	*.84	‡.90	*.98	*$1.10	*1.25	....	†$1.65	....	....	....	....	....	....
5/8	....	....	*1.10	*1.25	*1.40	....	*1.80	....	....	....	....	....	....
3/4	....	....	*1.20	*1.35	*1.50	†$1.75	*2.00	†$2.25	†$2.50	....	....	....	....
7/8	....	....	†1.40	‡1.55	*1.75	†2.00	*2.25	‡2.50	†2.75	....	....	....	....
1	....	....	*1.50	*1.65	*1.85	*2.15	*2.40	†2.70	*3.00	†$3.80	....	....	....
1 1/4	....	....	....	....	*2.20	*2.50	*2.80	†3.20	*3.60	†4.45	‡$5.75	....	....
1 1/2	....	....	....	....	*2.45	†2.80	*3.20	†3.60	*4.00	†5.10	‡6.50	....	....
1 3/4	....	....	....	....	....	....	†3.65	....	†4.60	†5.85	‡7.40	....	....
2	....	....	....	....	....	....	*4.00	....	*5.10	†6.55	†8.15	....	....
2 1/2	....	....	....	....	....	....	....	....	†6.20	†7.80	†9.85	‡$12.50	....
3	....	....	....	....	....	....	....	....	....	‡9.15	‡11.20	‡14.40	....

*Flat, round or oval head. †Flat or round head. ‡Flat head only. §Round head only.

Unlisted lengths, diameters and head styles, prices upon application.

No. 2900 Star Tumblin Toggle Bolts



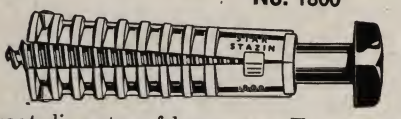
For lath, plaster, hollow tile, pressed boards, hollow metal, or sheet metal. Channel construction permits toggle head to fold closely over bolt and pass through small hole. Toggle head set off center to fall quickly into position. Will not break edges of brittle material. Toggle thread is National Standard.

P—plumbers' toggle; No. 5 Tumblin head, with threaded rod and cap nut. **F**—with flat head screw. **R**—with round head screw. **M**—mushroom head, 1/8-inch diameter only.

No.	Per 100	Diameter and Length of Screw Inches	Wire Gage Threads per In.	Size Drill Required Inches	No. of Pieces in Box	No. in Shipping Carton	Ship. Wt. Lb. per 100
		With M or F Head Screws					
2906	$6.60	1/8x2	6–32	5/16	50	500	1½
2907	6.80	1/8x3	6–32	5/16	50	500	2
2908	7.00	1/8x4	6–32	5/16	50	500	2
		With R or F Head Screws					
2909	$6.90	3/16x2	10–24	½	50	250	3¾
2910	7.00	*3/16x3	10–24	½	50	250	4½
2911	7.30	*3/16x4	10–24	½	50	250	5
2912	8.40	3/16x5	10–24	½	50	250	6
2913	8.90	3/16x6	10–24	½	50	250	6½
2915	7.70	¼x3	¼–20	⅝	50	250	7
2916	8.00	*¼x4	¼–20	⅝	50	250	8
2917	9.40	¼x5	¼–20	⅝	50	250	9
2918	9.80	¼x6	¼–20	⅝	50	250	10½
2920	12.00	5/16x3	5/16–18	⅞	25	125	14
2921	13.00	5/16x4	5/16–18	⅞	25	125	14½
2922	14.00	5/16x5	5/16–18	⅞	25	125	17
2923	15.00	5/16x6	5/16–18	⅞	25	125	19
2925	14.00	⅜x3	⅜–16	⅞	25	125	16½
2926	16.00	⅜x4	⅜–16	⅞	25	125	19
2927	18.00	⅜x5	⅜–16	⅞	25	125	21½
2928	20.00	⅜x6	⅜–16	⅞	25	125	24
		No. 5 Toggle Heads Only					
2906-H	$6.30	⅛	.....	5/16	..	...	1
2910-H	6.40	3/16	.....	½	..	...	2½
2915-H	7.00	¼	.....	⅝	..	...	3½
2920-H	9.00	5/16	.....	⅞	..	...	6½
2925-H	12.00	⅜	.....	⅞	..	...	6½

Toggle heads only are furnished in bulk or to order.
*No. 3 toggle (Style P) made in three sizes only; capnut extra.

Star Stazin Lag Screw Expansion Shields
No. 1800



Made of a special alloy, rust-proof throughout. Threads bear completely on root diameter of lag screw. External corrugations or ribs. End sections are reinforced.

No.	Per 100 Less Bolts	Diam. Lag Screw Inches	Length Inches	O.D., In. and Drill Req.	No. in Std. Pkg.	Ship. Wt. Lb. per 100
			Long			
1815	$15.00	¼	1½	½	50	5
1820	18.00	5/16	1¾	½	50	5
1825	25.00	⅜	2½	⅝	50	10
1835	38.00	½	3	¾	25	17
1845	45.00	⅝	3½	⅞	25	23
1855	65.00	¾	3½	1	10	30
			Short			
1818	$15.00	¼	1	½	50	3½
1823	18.00	5/16	1¼	½	50	4
1828	25.00	⅜	1¾	⅝	50	7
1838	38.00	½	2	¾	25	12
1848	45.00	⅝	2	⅞	25	15
1858	65.00	¾	2	1	10	20

Long shield will be furnished unless otherwise specified.

No. 3000 Star Snapin Toggle Bolts

All steel.

Threads are National Standard, not stove bolt threads.

F—with flat head screw.

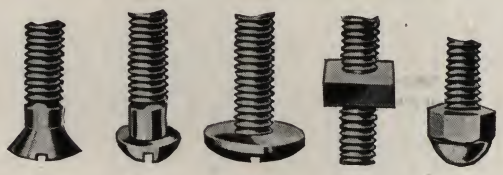
R—with round head screw.

M—with mushroom head, furnished 1/8-inch diameter only.

N—reverse R or F screw and add nut.

P—reverse R or F screw and add capnut.

***Capnuts are extra.**



No.	Per 100	Diameter and Length of Screw Inches	Wire Gage Threads per Inch	Drill Size Required Inches	No. of Pieces in Box	No. in Ship. Carton	Ship. Wt. Lb. per 100
		With M or F Head Screws					
3006	$6.60	⅛x2	6—32	⅜	50	500	1½
3007	6.80	⅛x3	6—32	⅜	50	500	2
3008	7.00	⅛x4	6—32	⅜	50	500	2¼
		With R, F, N, or P* Screws					
3009	$6.90	3/16x2	10—24	½	50	250	3
3010	7.00	3/16x3	10—24	½	50	250	3½
3011	7.30	3/16x4	10—24	½	50	250	4½
3012	8.40	3/16x5	10—24	½	50	250	5
3013	8.90	3/16x6	10—24	½	50	250	6
3015	7.70	¼x3	¼—20	⅝	50	250	6½
3016	8.00	¼x4	¼—20	⅝	50	250	7½
3017	9.40	¼x5	¼—20	⅝	50	250	8½
3018	9.80	¼x6	¼—20	⅝	50	250	10
3020	12.00	5/16x3	5/16—18	⅞	25	125	12
3021	13.00	5/16x4	5/16—18	⅞	25	125	14
3022	14.00	5/16x5	5/16—18	⅞	25	125	15½
3023	15.00	5/16x6	5/16—18	⅞	25	125	17½
3025	14.00	⅜x3	⅜—16	⅞	25	125	15
3026	16.00	⅜x4	⅜—16	⅞	25	125	15½
3027	18.00	⅜x5	⅜—16	⅞	25	125	18½
3028	20.00	⅜x6	⅜—16	⅞	25	125	22½
		Toggle Heads Only					
3006-H	$6.30	⅛	6—32	⅜	..	...	1
3010-H	6.40	3/16	10—24	½	..	...	1½
3015-H	7.00	¼	¼—20	⅝	..	...	3
3020-H	9.00	5/16	5/16—18	⅞	..	...	7
3025-H	12.00	⅜	⅜—16	⅞	..	...	7

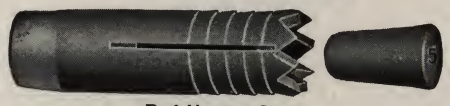
Toggle heads only are furnished in bulk or to order.

No. 400 Star Scruin Lead Screw Anchors

Designed for high holding power and a larger range of screw sizes than other designs. The ribbed sides and bell shaped top fill irregular bore at top of the masonry hole. This locks the anchor in, preventing it from turning when tightening up the screw. Bell shaped throat also serves to center the screw when inserted.

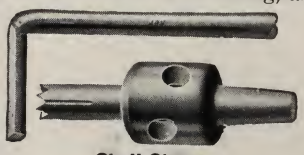
Screw Size and Length of Anchor Inches	Per 100 without Screws	Fractional Screw Size, In	O.D. and Drill Required Inches	Std. Pkg.	Shipping Carton	Ship. Wt. Lb. per 100
6– 8 x ¾	$5.00	⅛–3/16	¼	100	1000	1
6– 8 x1½	5.60	⅛–3/16	¼	100	500	2
10–12–14x1	5.60	3/16–¼	5/16	100	500	2
10–12–14x1½	8.00	3/16–¼	5/16	100	500	3
16–18x1	6.25	5/16	⅜	100	500	3
16–18x1½	9.00	5/16	⅜	25	250	4
20–22–24x1¾	10.00	⅜	7/16	25	250	6

Phillips Self-Drilling Rod Hanger Expansion Shells



Rod Hanger Shell

For fastening various equipment to concrete and stone, and to brick where laid up in cement mortar, is a combination steel expansion shell and drill, consisting of but two parts—the shell, and a tapered plug or expander. Each shell makes its own hole and is then expanded in the hole and utilized as a fastening, assuring perfect fit.



Shell Chuck

The chuck is used for installing rod hanger shells with the spring hammer. It has a tapered socket to receive tapered end of shell and hold it rigid during drilling and expanding operations. Rod hanger shells are also installed with Phillips Electric hammers and with other makes of electric and pneumatic hammers by using Phillips special chucks.

Bolt Size In.	Rod Hanger Shells O.D. In.	Length In.	Length Threads In.	Per 100	Shell Chucks No.	Each
1/4	7/16	1 9/16	5/8	$20.00	1	$4.00
3/8	9/16	1 7/8	3/4	30.00	3	4.50
1/2	11/16	2 1/2	1	40.00	4	5.00
5/8	27/32	3	1 1/8	50.00	5	5.50
3/4	1	3 3/4	1 1/8	80.00	6	6.00
7/8	1 1/8	4 1/4	1 1/8	110.00	7	6.00

Hand Chucks

Fits any size shell chuck; recommended for use with same where necessary to install rod hanger shells by hand.
Hand Chucks.....each **$2.00**

Rawl-Drive Expansion Bolts

For use in any hard materials. A cadmium-plated, self-contained combination expansion anchor in one piece. No separate screws or bolts are used. Made in 2 styles, headed (round or countersunk) and stud (with square nut).

Hole is drilled exact size of bolt. It is driven in this hole with a hammer. Stud type also drives in like a nail.

Standard package—one box of the same size, length, and type

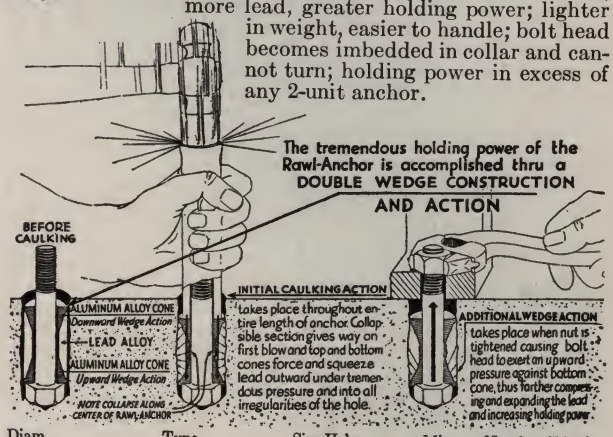
Diam. Bolt & Drill In.	Lgth. Bolt In.	Headed Type per 100	Stud Type per 100	Use Rawl-Drill	No. in Box	Approx. Wt. Lbs. per 100
3/16	1	$3.75	.....	No. 8	100	1 3/4
3/16	1 1/4	4.20	$7.50	No. 8	100	2
3/16	1 1/2	†4.70	.....	No. 8	100	2
3/16	2	†5.70	.....	No. 8	100	2 1/4
3/16	2 1/2	†6.70	.....	No. 8	100	2 1/4
1/4	1 1/4	5.10	.....	No. 12	100	3
1/4	1 1/2	5.60	8.55	No. 12	100	3 1/2
1/4	2	6.50	9.40	No. 12	100	4
1/4	2 1/2	7.50	.....	No. 12	100	4 1/4
1/4	3	†8.50	.....	No. 12	100	4 1/2
1/4	3 1/2	†9.50	.....	No. 12	100	5
5/16	1 1/2	*6.50	.....	No. 16	50	6
5/16	2	7.40	9.60	No. 16	50	7
5/16	2 1/2	8.40	10.50	No. 16	50	8
5/16	3	9.30	11.40	No. 16	50	9
3/8	2	9.30	.....	No. 20	25	10
3/8	2 1/2	10.20	11.60	No. 20	25	12
3/8	3	11.20	12.60	No. 20	25	13
3/8	3 1/2	12.10	13.60	No. 20	25	15
1/2	3	22.00	.....	1/2"	25	25
1/2	3 1/2	24.00	24.00	1/2"	25	28
1/2	4	26.00	26.00	1/2"	25	30

*Without countersunk head. †Countersunk head only.

Rawl-Anchor Bolt Anchors

The Rawl-Anchor is an improved one-piece, double-ended, double-expanding anchor providing a positive holding of any size bolt from 1/4 to 1 inch in masonry. Double zinc alloy cones when caulked spread lead out and provide a powerful anchor.

Among their numerous advantages are the following: Applied with either end up; one piece, no possibility of misassembling; zinc alloy shoulders expand when caulked and prevent lead creeping; one Rawl-Anchor caulks to same height as 2 multiple anchors; no limit to expansion of lead; more lead, greater holding power; lighter in weight, easier to handle; bolt head becomes imbedded in collar and cannot turn; holding power in excess of any 2-unit anchor.

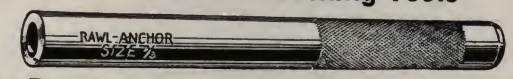


Diam. Bolt In.	*Per 100	Type Bolt Head	Size Hole Drill Inches	Min. Depth Hole, In.	Number Packed in Box	Shipping Wt., Lbs. per 100
1/4	$7.50	Sq.	1/2	1	100	4
5/16	8.50	Sq.	5/8	1 3/16	100	8
3/8	10.50	Sq.	3/4 or 13/16	1 3/8	100	12
1/2	17.50	Sq.	1	2	50	30
5/8	22.50	†Hex.	1 1/8	2 1/4	50	38
3/4	33.50	†Hex.	1 1/4 or 1 3/8	2 1/2	25	50
7/8	42.00	†Hex.	1 1/2	2 3/4	20	80
1	59.00	†Hex.	1 5/8 or 1 3/4	3	20	86

*Bolts not included.

†If hexagon head bolts are not obtainable, square head may be used, in which case hole drilled should take larger head.

Rawl-Anchor Caulking Tools



For Rawl-Anchors up to and including 5/8 inch. Tool is tubular in form, made of cold rolled steel, and case-hardened. For 3/4-inch, 7/8-inch, and 1-inch anchors, tool is offset type, easy to handle, does not limit length of bolt being used and is a tool steel forging, heat-treated.

Size.....inches	1/4	5/16	3/8	1/2	5/8	3/4	7/8 & 1
Tubular Type..each	$.50	.50	.60	.85	1.50	1.50	3.40
Offset Type...each	...	...	...	...	....	$1.80	1.80

Type 66 Rawl Hammer-Set Bolt Anchors

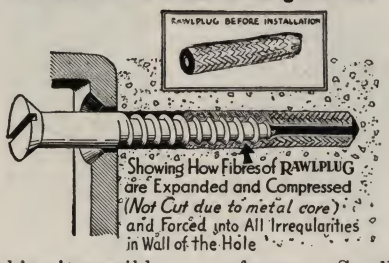
For installations where anchor is flush with surface. Drill hole in masonry; drop anchor, threaded cone first; strike sharply with hammer until flush with surface.

*Bolt broke in tension.
†Concrete failed.

Size In.	Per 100	Diam. Hole In.	Min. Depth Hole In.	Holding Power Pounds 1:2:4 Concrete	No. in Box	Ship. Wt. Lb. per 100
3/16	$6.50	3/8	7/8	*1150	100	1 1/2
1/4	7.50	3/8	7/8	*2375	100	1 1/2
5/16	8.50	5/8	1 3/8	*3100	100	7
3/8	10.50	5/8	1 3/8	*5700	100	7
1/2	17.50	3/4	1 3/4	†8700	50	12
5/8	22.50	1	2 1/8	†10000	50	25

Rawlplug Fiber Screw Anchors

For Use with Wood or Lag Screws



Holds screws fast. Works equally well in wood, glass, masonry, plaster, slate, rubber, marble, tile, brick, concrete, or metal.

Unaffected by moisture, temperature, insects, fungus, vibration or shock.

Has a high compression value. The hole, screw and Rawlplug are practically the same size, therefore the fibers must be compressed when screw enters Rawlplug.

Due to the metal core the threads of the screw do not cut the fibers of the plug, but instead thread the metal core, making it possible to unscrew and replace the screw and also further compress the fibers into an absolutely compact mass. With the Rawlplug the maximum amount of material is compressed into the smallest possible space.

The fiber construction of Rawlplug being flexible permits the plug to conform to any irregularities of the hole under compressive action of screw. Thus the entire length and circumference of plug grips the full surface of hole. Because of this elastic compression, shock and vibration have no effect on the gripping power of Rawlplugs.

Braided with a metal center, can be driven in tight hole, will not crush in tool kit.

Is impregnated 100 per cent against any form of deterioration.

The metal center serves as a guide and also acts as a lubricant for quick insertion of screw. Small sizes can be cut with cutting pliers, larger sizes with hack saw.

Rawlplugs for use with standard wood screws packed 100 in a box except Nos. 16 and 20 which are packed 50 in a box. Rawlplugs for use with lag screws packed 25 in a box. A standard package contains one dozen boxes of Rawlplugs of same size and length or one dozen M/T or R/T Rawldrills or ½ dozen holders of the same size.

For Use with Standard Wood Screws

Rawlplug No.	Lgth. In.	Per 100	For Wood Screw Gage No.	Lgth. In.	Approx. Wt. Lb. per Std. Pkg.	M/T or R/T Rawldrill No.	Per Doz.	Diam. In.	Tool-Holder No.	Per Doz.	Twist Drill Size No. or In.
6	5/8	$1.25	5–6	1	1	6	$7.50	5/32	14	$12.00	5/32
6	3/4	1.30	5–6	1¼	1	6	7.50	5/32	14	12.00	5/32
6	1	1.45	5–6	1½	1½	6	7.50	5/32	14	12.00	5/32
8	5/8	1.50	7–8	1	1½	8	7.50	11/64	14	12.00	15
8	3/4	1.60	7–8	1¼	1½	8	7.50	11/64	14	12.00	15
8	1	1.80	7–8	1½	2	8	7.50	11/64	14	12.00	15
8	1½	2.20	7–8	2½	2½	8	7.50	11/64	14	12.00	15
10	3/4	1.80	9–10	1¼	1¾	10	7.50	3/16	14	12.00	10
10	1	2.05	9–10	1½	2½	10	7.50	3/16	14	12.00	10
10	1¼	2.30	9–10	1¾	2¾	10	7.50	3/16	14	12.00	10
10	1½	2.55	9–10	2½	3¼	10	7.50	3/16	14	12.00	10
12	3/4	2.20	11–12	1¼	2½	12	7.50	¼	14	12.00	¼
12	1	2.45	11–12	1½	3½	12	7.50	¼	14	12.00	¼
12	1¼	2.70	11–12	1¾	4¾	12	7.50	¼	14	12.00	¼
12	1½	2.95	11–12	2½	5½	12	7.50	¼	14	12.00	¼
14	1	2.90	*14	1½	4½	14	8.25	9/32	14	12.00	9/32
14	1¼	3.20	*14	1¾	5½	14	8.25	9/32	14	12.00	9/32
14	1½	3.50	*14	2	6	14	8.25	9/32	14	12.00	9/32
14	1½	3.50	*14	2½	6	14	8.25	9/32	14	12.00	9/32
14	2	4.10	*14	3½	8	14	8.25	9/32	14	12.00	9/32
16	1	3.30	*16	1½	2½	16	9.00	5/16	20	15.00	5/16
16	1½	4.10	*16	2	3¾	16	9.00	5/16	20	15.00	5/16
16	1½	4.10	*16	2½	3¾	16	9.00	5/16	20	15.00	5/16
16	2	4.90	*16	3½	5	16	9.00	5/16	20	15.00	5/16
20	1	4.90	†20	1½	3½	20	10.80	3/8	20	15.00	3/8
20	1½	5.90	†20	2	5½	20	10.80	3/8	20	15.00	3/8
20	1½	5.90	†20	2½	5½	20	10.80	3/8	20	15.00	3/8
20	2	6.90	†20	3½	7½	20	10.80	3/8	20	15.00	3/8

For Use with Lag Screws

Rawlplug Size In.	Lgth. In.	Per 100	For Lag Screw Size In.	Lgth. In.	Approx. Wt. Lb. per Std. Pkg.	Rawldrill Size Inches Per Doz.	M/T	R/T	Tool-Holder No.	Per Doz.	Twist Drill Size Inches
3/8	1½	$6.50	3/8	2½–3	3½	$13.80	7/16	7/16	20	$15.00	7/16
3/8	2	7.50	3/8	3¼–4	4½	13.80	7/16	7/16	20	.....	7/16
3/8	2½	8.50	3/8	4½–5	5½	13.80	7/16	7/16	20	.....	7/16
3/8	3	9.50	3/8	5½–6	6½	13.80	7/16	7/16	20	.....	7/16
7/16	1½	7.00	7/16	2½–3	4½	18.75	..	½	20	15.00	½
7/16	2	8.50	7/16	3½–4	4¾	18.75	..	½	20	.....	½
7/16	2½	10.00	7/16	4½–5	5½	18.75	..	½	20	.....	½
7/16	3	11.50	7/16	5½–6	7½	18.75	..	½	20	.....	½
½	2	10.00	½	3½–4	7½	22.50	..	5/8	20	15.00	5/8
½	2½	11.50	½	4½–5	8½	22.50	..	5/8	20	.....	5/8
½	3	13.00	½	5½–6	10	22.50	..	5/8	20	.....	5/8
5/8	2½	13.50	5/8	4½–5	11	26.25	..	¾	20	15.00	¾
5/8	3	15.00	5/8	5½–6	13	26.25	..	¾	20	.....	¾
5/8	3½	16.50	5/8	7	15	26.75	..	¾	20	15.00	¾

Rawlplug Contractors' Outfits

The ideal outfit for superintendents of office buildings, institutions, hotels, apartments; maintenance engineers in industrial plants; and all contractors.

Qty.	Description	Qty.	Description
100	No. 8x1-Inch Rawlplugs....	1	No. 12 Rawltwist Drill.....
100	No. 10x1-Inch Rawlplugs....	1	No. 14 Rawltwist Drill.....
100	No. 12x1¼-In. Rawlplugs....	1	No. 8 M/T Rawldrill.....
100	No. 14x1¼-In. Rawlplugs....	1	No. 10 M/T Rawldrill.....
50	No. 16x1½-In. Rawlplugs....	1	No. 12 M/T Rawldrill.....
50	No. 20x1½-In. Rawlplugs....	1	No. 14 M/T Rawldrill.....
1	No. 14 Rawl-Grip.....	1	No. 16 M/T Rawldrill.....
1	No. 20 Rawl-Grip.....	1	No. 20 M/T Rawldrill.....
1	No. 8 Rawltwist Drill.....	1	No. 14 Toolholder.....
1	No. 10 Rawltwist Drill.....	1	No. 20 Toolholder.....
1	Rawlplug and Screw Gage...	..	Samples of 10–24 Rawls.....
1	Tool Ejector.....	..	Samples of ¼x1½-In. R.H., Countersink, and Stud Rawl-Drives.....
1	Rawlplug Instruction Sheet.		
1	Heavy Gage Steel Mechanics	..	Samples of ¼-In. Hammer-Set Type 66
1	Tool Box.....	..	Complete Rawl-Product Catalog.....

Complete Outfit.....each **$20.00**

*For ¼-inch lag screw use No. 14 or No. 16 Rawlplug.

†For 5/16-inch lag screw use No. 20 Rawlplug.

Holding Power of Rawlplugs

Wood Screws

Rawlplug No.	Size Hole In.	Screw Gage No.	Lgth. Screw Engaged Inches	Pounds Pull 1:2:4 Concrete	Pounds Pull Brick Masonry
12	¼	12	1½	1525	660
14	9/32	14	1½	1590	900
16	5/16	16	1½	2150	1400
20	3/8	20	2	2830	1750

Lag Screws

Rawlplug Size In.	Size Hole In.	Screw Size In.	Lgth. Screw Engaged Inches	Pounds Pull 1:2:4 Concrete	Pounds Pull Brick Masonry
3/8	7/16	3/8	2½	3700	2980
7/16	½	7/16	2	6670	2970
½	5/8	½	3	8900	3900
5/8	¾	5/8	3	12700	6150

Type 77 Rawl-Tapers

(Machine Screw Anchors)

Either a new or worn drill can be used to equal advantage because the tapered section fits the hole drilled by either drill. Drills can be used longer.

Serrated teeth or grooves fold tightly over one another thereby obtaining a greater grip against vibration, shock or pull.

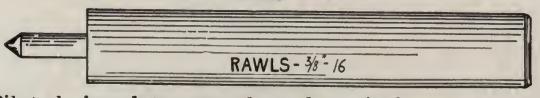
The collar on the conical nut prevents the cone from being drawn through the lead when heavy overloads are applied.

Per 100
Not Including Screws

Size No.	Per 100	Min. Dimen. of Holes Req. Diameter Inches	Min. Dimen. of Holes Req. *Depth Inches	Holding Power Pounds 1:2:4 Concrete	No. in Box	Shipping Weight Pounds per 100
6 x32	$3.80	5/16	1/2	625	100	1
8 x32	4.50	5/16	1/2	950	100	1
10 x24	4.95	3/8	5/8	1100	100	2
12 x24	6.50	1/2	7/8	1750	100	4
1/4"x20	7.20	1/2	7/8	2275	100	4
5/16"x18	9.75	5/8	1	2850	50	9 1/2
3/8"x16	12.00	3/4	1 1/4	3670	50	16 1/4
7/16"x14	15.00	7/8	1 1/2	6950	50	23
1/2"x13	15.00	7/8	1 1/2	7200	50	23
5/8"x11	25.00	1	2	7800	50	41

*If Rawls are being used in poor masonry, a deeper hole should be drilled to obtain maximum holding.

Caulking Tools



Pilot designed to pass through conical nut preventing dust from entering threads. Enables bolt to be screwed through to bottom thread.

One caulking tool furnished with each box of Rawls.

Forged Rawldrills

Standard Type Drills—Symbol S/T

For hand drilling. Forged from best quality tool steel, accurately hardened and tempered. Enlarged handle eliminates shock to hand.

Triangle Drills

Reg. U.S. Pat. Off.

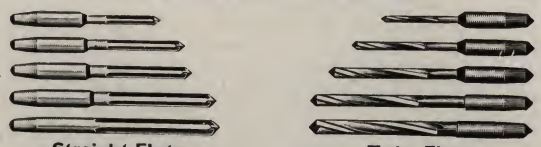
For hand drilling.

Size Actual Diameter Inches	Overall Length As Shown Per Doz.	Overall Length 12-Inch Per Doz.	Overall Length 18-Inch Per Doz.	Overall Length 24-Inch Per Doz.
*1/4 x 8	$13.80	.....	.....	.....
*5/16 x 8	13.80	.....	.....	.....
3/8 x 9	18.60	.....	.....	.....
7/16 x10	18.60	.....	.....	.....
1/2 x10	18.60	.....	$30.00	.....
9/16 x12	19.20	.....	.....	.....
5/8	.....	$19.20	31.20	.....
11/16	.....	21.60	.....	.....
3/4	.....	21.60	31.20	.....
13/16	.....	25.80	.....	.....
7/8	.....	25.80	32.40	.....
1	.....	30.00	36.00	.....
1 1/8	.....	36.00	45.00	.....
*1 1/4	.....	48.00	60.00	.....
*1 3/8	.....	60.00	.....	.....
*1 1/2	.....	84.00	.....	.....
*1 5/8	.....	96.00	108.00	.....

*Not made in Standard Type—Triangle Type only.

Rawldrills

Machined Type (M/T) or Rawl Twist (R/T) For Hand and Power Drilling



Straight Flute Machined Type (M/T) — Twist Flute Rawl-Twist (R/T)

Toolholder

Machined to size from solid bars of high grade tool steel. Made in sizes for all Rawlplugs and Rawldrives.

Used in a toolholder when drilling by hand and in Rawlchuck when drilling by power hammer. Made to exact diameters. Can be resharpened on any grinding wheel.

Machined type, symbol M/T, has straight flute. Rawltwist, symbol R/T, is percussion drill with twist flute.

Drills are packed 1 dozen same size in standard package. Holders, 1/2 dozen same size in standard package.

Size No. or In.	Per Dozen	Overall Length Inches M/T	Overall Length Inches R/T	Drilling Depth Inches M/T	Drilling Depth Inches R/T	Toolholder Diameter Inches	Toolholder No.	Toolholder Per Doz.
6	$7.50	2 3/4	2 3/4	1	1	5/32	14	$12.00
8	7.50	3 1/4	3 1/4	1 5/8	1 5/8	11/64	14	12.00
10	7.50	3 1/4	3 1/4	1 5/8	1 5/8	3/16	14	12.00
12	7.50	3 3/4	3 3/4	2	2	1/4	14	12.00
14	8.25	3 3/4	3 3/4	2 1/4	2 1/4	9/32	14	12.00
16	9.00	4 1/4	4 1/4	2 3/8	2 3/8	5/16	20	15.00
20	10.80	4 1/4	5	2 3/4	3 1/8	3/8	20	15.00
7/16	13.80	5 1/8	5 1/8	3 1/8	3 1/8	7/16	20	15.00
* 1/2	18.75	...	5 7/16	...	3 5/8	1/2	20	15.00
* 5/8	22.50	...	6	...	4	5/8	20	15.00
* 3/4	26.25	...	6	...	4	3/4	20	15.00

*Made in twist type only. Drill Ejectors, $1.50 per dozen.

Taper Shank Rawldrills

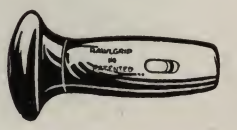
Symbol T/S—For Power Hammers

Can be used in all electric and pneumatic chipping hammers with proper Rawlchuck. No. 20 taper drills used with No. 20 tool holders for hand use.

Diam. Inches	Overall Length 6-Inch Per Doz.	Overall Length 12-Inch Per Doz.	Overall Length 18-Inch Per Doz.	Overall Length 24-Inch Per Doz.	Rawldrill Taper
3/8	*$13.80	.....	.....	.....	No. 20
7/16	*13.80	*$15.60	.....	.....	No. 20
1/2	*13.80	*15.60	.....	.....	No. 20
9/16	*16.20	.....	.....	.....	No. 20
5/8	*16.20	*18.60	.....	.....	No. 20
11/16	*18.00	.....	.....	.....	No. 20
3/4	*18.00	*19.80	.....	.....	No. 20
13/16	*20.40	.....	.....	.....	No. 20
7/8	†22.80	†27.60	.....	.....	No. 5/8
1	22.80	28.80	.....	.....	No. 5/8
1 1/8	33.60	37.80	.....	.....	No. 5/8
1 1/4	.....	49.20	.....	.....	No. 5/8
1 3/8	.....	52.80	.....	.....	No. 5/8
1 1/2	.....	60.00	.....	.....	No. 5/8
1 5/8	.....	72.00	.....	.....	No. 5/8

*Also made with No. 5/8 taper, which size stock must be used when drilling by air—6-inch, $30.00; 12-inch, $36.00; 18-inch, $54.00 per dozen. †Also made with No. 20 taper—6-inch, $27.60, 12-inch $33.60 per dozen.

Rawl-Grips



Made of hard live rubber in two sizes to fit No. 14 and No. 20 Rawldrill holders. Fits over holder, providing a firm, comfortable grip and protects the hand from injury.

Size No. 14 or No. 20..... ... .each **$1.25**

Jenkins Bronze Globe and Angle Valves

Renewable Composition Disc—With Slip-On Stay-On Disc Holder—Screw-Over Bonnet

Screwed Ends
150 Pounds Steam Working Pressure
300 Pounds Non-Shock Oil, Cold Water, Gas Working Pressure
Flanged Ends
150 Pounds Steam Working Pressure
225 Pounds Non-Shock Oil, Cold Water, Gas Working Pressure

No. 106-A Globe, Screwed

Exceptionally serviceable for the control of steam, fluids and gases where tightness is essential and frequent operation is required.

The resilient composition disc assures drop-tight closure with least closing-effort.

No. 108-A Angle, Screwed

	Screwed			Flanged			
Size In.	No. 106-A Globe, No. 108-A Angle Each	Globe End to End In.	Angle Ctr. to End In.	No. 107-A Globe, No. 109-A Angle Each	Globe Face to Face In.	Angle Ctr. to Face In.	Diam. Flange In.
1/8	$2.40	1 9/16	25/32	.....	...	...	...
1/4	2.60	2 3/32	1 3/64	$9.00	3	1 11/16	2 1/2
3/8	3.00	2 11/32	1 11/64	10.20	3 1/4	1 13/16	2 1/2
1/2	3.60	2 19/32	1 15/64	11.40	3 7/16	2 1/4	3 1/2
3/4	4.70	3 5/32	1 31/64	13.00	3 7/8	2 7/16	3 7/8
1	6.60	3 23/32	1 47/64	15.00	4 3/8	2 11/16	4 1/4
1 1/4	8.60	4 7/32	1 63/64	23.00	4 7/8	2 7/8	4 5/8
1 1/2	12.00	4 23/32	2 15/64	28.00	5 1/2	3 3/16	5
2	19.00	5 11/16	2 23/32	42.00	6 1/2	3 3/4	6
2 1/2	34.00	6 5/8	3 1/4	63.00	7 1/2	4 5/16	7
3	48.00	8	3 3/4	86.00	8 7/8	4 5/8	7 1/2

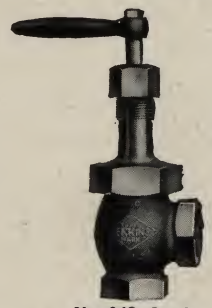
Jenkins Quick-Opening Bronze Globe and Angle Valves

No. 941, Globe with Lever **No. 943, Angle with Lever**
No. 942, Globe with Wheel **No. 944, Angle with Wheel**

Renewable Composition Disc—Slip-On Stay-On Holder Screw-Over Bonnet

Screwed Ends
150 Pounds Maximum Non-Shock Cold Oil, Water, Gas Pressure

No. 941, Globe with Lever



No. 943, Angle with Lever

For control of oil, water, and gas where tightness is essential and quick-opening is required.

Generally installed with the inlet pressure above the seat, making the valve operate under reverse action.

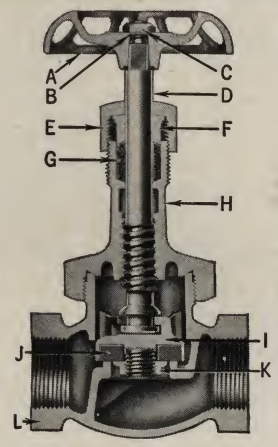
Size In.	Each	Globe End to End Inches	Angle Center to End Inches	Size In.	Each	Globe End to End Inches	Angle Center to End Inches
1/4	$4.20	2 3/32	1 3/64	1 1/4	$11.00	4 7/32	1 63/64
3/8	4.50	2 11/32	1 11/64	1 1/2	14.40	4 23/32	2 15/64
1/2	5.30	2 19/32	1 15/64	2	21.00	5 11/16	2 23/32
3/4	6.30	3 5/32	1 31/64	2 1/2	63.00	6 5/8	3 1/4
1	7.80	3 23/32	1 47/64	3	70.00	8	3 3/4

Parts for Jenkins Bronze Valves

With One Piece Screw-Over Bonnet and Slip-On Stay-On Disc Holder

Globe, Angle, and Cross Nos. 106A, 107A, 108A, 109A, 110A, and 111A

Screwed Ends:
For 150 Pounds Steam Working Pressure
For 300 Pounds Non-Shock Cold Oil, Water or Gas Working Pressure
Flanged Ends:
For 150 Pounds Steam Working Pressure
For 225 Pounds Non-Shock Oil, Cold Water or Gas Working Pressure



A–Wheel
C–Wheel Nut
D–Spindle
E–Packing Nut
F–Follower
G–Packing
H–Bonnet
I–Disc Holder
J–Disc
K–Disc Nut
L–Body
TC–Trimming Complete
DHC–Disc Holder Complete

These 150-pound bronze globe, angle, and cross valves, are fitted with a slip-on stay-on disc holder and a one-piece screw-over bonnet.

The valves are regularly fitted with Jenkins renewable composition discs for 150 pounds steam pressure, and when so ordered, can be furnished with Jenkins discs for air, water, gas, oils, gasoline, and other fluids.

Item TC in table is trimming complete with the exception of the body but including disc. Item DHC is slip-on stay-on disc holder complete: parts I, J and K.

No.	1/8-In. Size Each	1/4-In. Size Each	3/8-In. Size Each	1/2-In. Size Each	3/4-In. Size Each	1-In. Size Each
A	$.20	$.25	$.25	$.35	$.40	$.45
C	.03	.03	.03	.03	.03	.04
D	.30	.40	.45	.50	.55	.80
E	.30	.35	.35	.35	.45	.55
F	.05	.05	.05	.05	.10	.15
G	.03	.05	.05	.05	.08	.10
H	.85	.85	.95	1.10	1.30	1.75
I	.25	.30	.40	.45	.60	.80
K	....	.03	.03	.03	.10	.15
TC	2.10	2.35	2.60	3.00	3.65	4.90
DHC	.35	.40	.50	.60	.85	1.10

No.	1 1/4-In. Size Each	1 1/2-In. Size Each	2-In. Size Each	2 1/2-In. Size Each	3-In. Size Each
A	$.50	$.65	$.80	$1.40	$1.40
C	.06	.06	.10	.20	.20
D	.90	1.20	1.80	3.50	3.70
E	.65	.80	1.00	1.40	1.40
F	.15	.30	.40	.70	.70
G	.15	.25	.30	.40	.40
H	2.45	3.40	5.00	10.20	14.50
I	1.00	1.45	2.30	3.70	4.70
K	.20	.25	.40	.25	.30
TC	6.30	8.50	12.40	23.00	29.45
DHC	1.40	2.00	3.10	5.40	7.30

A Fair Offer

If you will
put a Jenkins Valve,
recommended for your particular
service, on the worst place you can find . . .
where you cannot keep other valves tight – and if it is not
perfectly right or it does not hold steam, oil, acids, water
or other fluids longer than any other valve,
you may return it and your money
will be refunded . . . .

A Fair Offer that has been
in effect since
1868

Jenkins Bros

FOR THE BEST IN VALVE DESIGN!

Call on us for the complete line of Jenkins Valves

BRONZE · IRON · STEEL

for every need!

You can specify "Jenkins" for practically every phase of commercial, industrial, engineering and plumbing and heating needs. The line of over 600 valves includes:

Iron, Bronze, Cast Steel and Corrosion-resisting-alloy Gate, Globe, Angle, Cross, Y and Check-valves . . . with composition, bronze, nickel alloy, iron and steel disc or plug . . . in solid wedge, split wedge, double disc-parallel seat and double disc-taper seat types . . . in inside screw and OS&Y patterns . . . with non-rising, traveling, rising and sliding spindle . . . conventional, quick-opening and rapid action . . . with screw-in, screw-over, union and bolted bonnet . . . with screw, flanged, union and solder ends . . . to meet Underwriters', AWWA, ASME and Marine specifications . . . for pressures from 125 to 600 pounds . . . for steam, air, oil, water, gas, chemicals, solvents and other fluids.

All are made to the standard of quality which has given Jenkins Valves the reputation of being "cheaper in the long run". Yet, with two exceptions, they cost no more to buy than other good valves.

Thos. Somerville Co.

First & N. Sts., N. E.

Washington 2, D. C.

Jenkins Regrind-Renew Bronze Globe and Angle Valves

Regrinding Bevel Seat Ring and Disc—Union Bonnet

Pressures: Screwed
200 Pounds Steam at 550°F.
400 Pounds Non-Shock Cold Oil, Water, or Gas
Pressures: Flanged
150 Pounds Steam at 550°F.
225 Pounds Non-Shock Cold Oil, Water, or Gas

No. 950 Globe, Screwed

Bevel type nickel-alloy disc is particularly able to withstand hard usage.

Disc can be reground without removing valve from line. Disc and seat ring are renewable.

Each valve is individually tested at the factory under hydrostatic pressures in excess of its basic rating.

No. 952 Angle, Screwed

Size Inches	Screwed: No. 950 Globe No. 952 Angle Each	Screwed: Globe End to End Inches	Screwed: Angle Center to End Inches	Flanged: No. 951 Globe No. 953 Angle Each	Flanged: Globe Face to Face Inches	Flanged: Angle Center to Face Inches	Flanged: Diam. Flange Inches
1/4	$4.00	2 1/16	1 3/64	$13.50	3	1 11/16	2 1/2
3/8	4.50	2 5/16	1 11/64	13.50	3 1/4	1 13/16	2 1/2
1/2	5.20	2 19/32	1 15/64	13.50	3 7/16	2 1/4	3 1/2
3/4	7.00	3 5/32	1 31/64	16.00	3 7/8	2 7/16	3 7/8
1	8.00	3 23/32	1 47/64	19.00	4 3/8	2 11/16	4 1/4
1 1/4	12.00	4 7/32	2	24.00	4 7/8	2 7/8	4 5/8
1 1/2	16.00	4 23/32	2 15/64	30.00	5 1/2	3 3/16	5
2	25.00	5 11/16	2 23/32	44.00	6 1/2	3 3/4	6
2 1/2	45.00	6 5/8	3 1/4	66.00	7 1/2	4 5/16	7
3	64.00	8	3 3/4	90.00	8 7/8	4 5/8	7 1/2

Jenkins Bronze Regrind-Renew Globe and Angle Valves

Renewable Seat Ring and Plug

Screwed Ends
200 Pounds Steam Pressure at 550°F.
400 Pounds Non-Shock Cold Oil, Water, Gas Pressure

Flanged Ends
150 Pounds Steam Pressure at 550°F.
225 Pounds Non-Shock Cold Oil, Water, Gas Pressure

No. 956 Globe, Screwed

Plug-seated, regrinding, union bonnet type valve.

Plug and seat ring are made of JX300 special heat-treated stainless steel. Plug resists galling, cutting, abrasion, erosion and corrosion. No threads, squares or sockets to impede or restrict flow.

No. 958 Angle, Screwed

Size In.	Screwed: No. 956 Globe, No. 958 Angle Each	Screwed: End to End In.	Screwed: Ctr. to End In.	Flanged: No. 957 Globe, No. 959 Angle Each	Flanged: Face to Face In.	Flanged: Ctr. to Face In.	Flanged: Diam. Flge. In.
1/4	$5.00	2 1/16	1 3/64	$14.90	3	1 11/16	2 1/2
3/8	5.40	2 5/16	1 11/64	14.90	3 1/4	1 13/16	2 1/2
1/2	6.60	2 19/32	1 15/64	14.90	3 7/16	2 1/4	3 1/2
3/4	8.00	3 5/32	1 31/64	17.00	3 7/8	2 7/16	3 7/8
1	10.00	3 23/32	1 47/64	21.00	4 3/8	2 11/16	4 1/4
1 1/4	14.00	4 7/32	1 63/64	26.00	4 7/8	2 7/8	4 5/8
1 1/2	20.00	4 23/32	2 15/64	34.00	5 1/2	3 3/16	5
2	30.00	5 11/16	2 23/32	49.00	6 1/2	3 3/4	6
2 1/2	55.00	6 5/8	3 1/4	76.00	7 1/2	4 5/16	7
3	80.00	8	3 3/4	106.00	8 7/8	4 5/8	7 1/2

Jenkins Regrind-Renew Bronze Globe and Angle Valves

Renewable Nickel-Alloy Bevel Seat Ring and Disc Union Bonnet

Screwed
300 Pounds Steam Pressure at 550°F.
600 Pounds Non-Shock Cold Oil, Water, Gas Pressure
Flanged
300 Pounds Steam Pressure at 550°F.
500 Pounds Non-Shock Cold Oil, Water, Gas Pressure

No. 970, Globe Screwed

No. 972, Angle Screwed

Size Inches	Screwed: No. 970 Globe No. 972 Angle Each	Screwed: Globe End to End Inches	Screwed: Angle Center to End Inches	Flanged: No. 971 Globe No. 973 Angle Each	Flanged: Globe Face to Face Inches	Flanged: Angle Center to Face Inches	Flanged: Diam. Flange Inches
1/4	$4.60	2 1/4	1 3/32	$20.00	3 1/2	2 3/32	3
3/8	5.00	2 1/2	1 3/16	20.00	3 1/2	2 3/32	3
1/2	6.60	2 7/8	1 3/8	20.00	3 3/4	2 17/32	3 3/4
3/4	8.80	3 1/2	1 11/16	22.50	4 1/2	2 31/32	4 5/8
1	11.00	4 1/8	2	28.00	5 1/16	3 7/32	4 7/8
1 1/4	14.50	4 11/16	2 1/4	35.00	5 9/16	3 15/32	5 1/4
1 1/2	20.00	5 1/4	2 1/2	50.00	7	3 7/8	6 1/8
2	33.00	6 1/4	3	72.00	8	4 3/8	6 1/2
2 1/2	55.00	7 3/8	3 9/16	100.00	9	5	7 1/2
3	83.00	8 3/8	4 1/16	140.00	10	5 7/16	8 1/4

Jenkins Regrind-Renew Bronze Globe and Angle Valves

Regrinding Seat Ring and Plug—Union Bonnet

Screwed Ends:
300 Pounds Steam Pressure at 550°F.
600 Pounds Non-Shock Cold Oil, Water, Gas Pressure
Flanged Ends:
300 Pounds Steam Pressure at 550°F.
500 Pounds Non-Shock Cold Oil, Water, Gas Pressure

No. 976, Globe Screwed

With regrinding seat ring and plug of JX500, a heat treated stainless steel of 500 Brinnell hardness.

Faces of plug are machined precisely, then lapped together for uniform bearing over entire seating surface.

No. 978, Angle Screwed

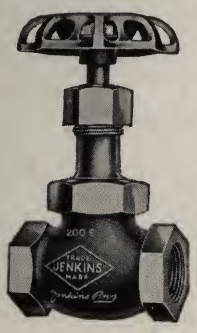
Size Inches	Screwed: No. 976 Globe No. 978 Angle Each	Screwed: Globe End to End In.	Screwed: Angle Ctr. to End In.	Flanged: No. 977 Globe No. 979 Angle Each	Flanged: Globe Face to Face In.	Flanged: Angle Ctr. to Face In.	Flanged: Diam. Flge. In.
1/4	$5.90	2 1/4	1 3/32	$24.00	3 1/2	2 3/32	3
3/8	6.30	2 1/2	1 3/16	24.00	3 1/2	2 3/32	3
1/2	8.30	2 7/8	1 3/8	24.00	3 3/4	2 17/32	3 3/4
3/4	10.70	3 1/2	1 11/16	24.00	4 1/2	2 31/32	4 5/8
1	13.30	4 1/8	2	31.00	5 1/16	3 7/32	4 7/8
1 1/4	17.50	4 11/16	2 1/4	40.00	5 9/16	3 15/32	5 1/4
1 1/2	24.00	5 1/4	2 1/2	52.00	7	3 7/8	6 1/8
2	40.00	6 1/4	3	75.00	8	4 3/8	6 1/2
2 1/2	66.60	7 3/8	3 9/16	114.00	9	5	7 1/2
3	100.00	8 3/8	4 1/16	180.00	10	5 7/16	8 1/4

Jenkins Bronze Globe and Angle Valves

Regrinding Bevel Disc—Union Bonnet

Screwed
200 Pounds Steam Pressure at 550°F.
400 Pounds Non-Shock Cold Oil, Water, Gas Pressure

Flanged
150 Pounds Steam Pressure at 550°F.
225 Pounds Non-Shock Cold Oil, Water, Gas Pressure



No. 750, Globe Screwed

These valves are most dependable for the control of steam, oil, water and gas where tightness is essential and operation is frequent.

The face of the seat parallels and equals that of the disc assuring that the contact area remains constant permanently and closure is tight.

No. 752, Angle Screwed

Size In.	Screwed: No. 750 Globe No. 752 Angle Each	Screwed: Globe End to End In.	Screwed: Angle Center to End In.	Flanged: No. 751 Globe No. 753 Angle Each	Flanged: Globe Face to Face In.	Flanged: Angle Center to Face In.	Flanged: Diam. Flange Inches
1/8	$2.30	1 3/4	...	.....	...	...	...
1/4	2.40	1 3/4	7/8	$10.00	3	1 11/16	2 1/2
3/8	2.60	2	1	10.00	3 1/4	1 13/16	2 1/2
1/2	3.00	2 1/4	1 1/8	10.00	3 7/16	2 1/4	3 1/2
3/4	4.80	2 7/8	1 7/16	13.00	3 7/8	2 7/16	3 7/8
1	6.00	3 9/32	1 5/8	16.00	4 3/8	2 11/16	4 1/4
1 1/4	8.40	3 7/8	1 15/16	20.00	4 7/8	2 7/8	4 5/8
1 1/2	11.00	4 7/16	2 7/32	28.00	5 1/2	3 3/16	5
2	18.00	5 3/8	2 11/16	37.00	6 1/2	3 3/4	6
2 1/2	33.00	6 5/16	3 5/32	60.00	7 1/2	4 5/16	7
3	46.00	7 3/8	3 11/16	75.00	8 7/8	4 5/8	7 1/2

Jenkins Regrinding Bronze Globe and Angle Valves

Regrinding Bevel Disc—Union Bonnet

Screwed Ends
300 Pounds Steam Pressure at 550°F.
600 Pounds Non-Shock Cold Oil, Water, Gas Pressure

No. 1130, Globe

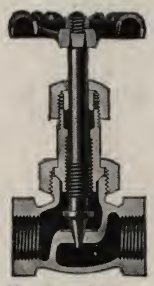
No. 1132, Angle

Seat is integral with body.

Size Inches	No. 1130, Globe: Each	No. 1130, Globe: End to End Inches	No. 1132, Angle: Each	No. 1132, Angle: Center to End Inches
1/4	$3.30	2 1/4	$3.30	1 3/32
3/8	3.70	2 1/2	3.70	1 3/16
1/2	4.70	2 7/8	4.70	1 3/8
3/4	6.00	3 1/2	6.00	1 11/16
1	8.00	4 1/8	8.00	2
1 1/4	11.00	4 11/16	11.00	2 1/4
1 1/2	15.00	5 1/4	15.00	2 1/2
2	24.00	6 1/4	24.00	3
2 1/2	42.00	7 3/8	42.00	3 9/16
3	62.00	8 3/8	62.00	4 1/16

Jenkins Bronze Globe and Angle Needle Valves

For 400 Pounds Steam Pressure at 550° F.
For 1200 Pounds Non-Shock Cold Oil, Water or Gas Pressure



No. 703, Globe Steel Spindle

No. 705, Globe Bronze Spindle

No. 706, Angle Bronze Spindle

For controlling air, gas, gasoline, oil and other fluids that require close regulation.

Made of high grade bronze. The bonnet is of the union type. The stuffing box is extra long, and is fitted with gland or follower. The wheel is malleable iron and enameled green.

The valves can be supplied with bronze spindle or with steel spindle, the latter when small seat openings are required.

Size Inches	Seat Openings Inches: Bronze Spindle	Seat Openings Inches: Steel Spindle	Price, Each: Steel Spindle No. 703 Globe	Price, Each: Steel Spindle No. 704 Angle	Price, Each: Bronze Spindle No. 705 Globe	Price, Each: Bronze Spindle No. 706 Angle
1/8	1/8	3/64	$6.50	$6.60	$4.80	$4.90
1/4	3/16	1/16	7.30	7.40	5.40	5.50
3/8	1/4	3/32	8.10	8.20	6.00	6.10
1/2	5/16	1/8	10.50	10.60	7.80	7.90

Jenkins Bronze Check Valves

Horizontal, Angle, and Vertical

Screwed
For 150 Lb. Steam Working Pressure
For 300 Lb. Non-Shock Cold Oil, Water, Gas Working Pressure

Flanged
For 150 Lb. Steam Working Pressure
For 225 Lb. Non-Shock Cold Oil, Water, Gas Working Pressure

No. 117-A, Horizontal Screwed

No. 118-A, Angle Screwed

No. 119, Vertical Screwed

Size In.	Screwed: No. 117-A Horiz. No. 118-A Angle Each	Screwed: No. 119 Vertical Each	Screwed: Horiz. End. to End In.	Screwed: Angle Ctr. to End In.	Screwed: Vertical End to End In.	Flanged: No. 316-A Horiz. No. 317-A Angle Each	Flanged: No. 120-B Vertical Each	Flanged: Horiz. Face to Face In.	Flanged: Angle Ctr. to Face In.	Flanged: Vertical Face to Face In.	Flanged: Diam. Flg. In.
1/8	$2.40	$2.40	1 9/16	25/32	1 3/4	.....	.....	...	....	....	...
1/4	2.60	2.60	2 1/8	1 1/16	2 3/8	.....	.....	...	....	....	...
3/8	2.90	2.90	2 3/8	1 3/16	2 3/4	.....	.....	...	....	....	...
1/2	3.20	3.20	2 5/8	1 1/4	3 3/16	$8.70	$8.70	3 7/16	2 1/4	3 7/16	3 1/2
3/4	4.20	4.20	3 3/16	1 1/2	3 9/16	10.80	10.80	3 7/8	2 7/16	3 13/16	3 7/8
1	5.80	5.80	3 3/4	1 3/4	4 1/8	14.40	14.40	4 3/8	2 11/16	4 1/2	4 1/4
1 1/4	8.00	8.00	4 1/4	2	4 1/2	17.25	17.25	4 7/8	2 7/8	4 13/16	4 5/8
1 1/2	11.00	11.00	4 3/4	2 1/4	5 1/4	21.60	21.60	5 1/2	3 3/16	5 1/2	5
2	16.00	16.00	5 11/16	2 3/4	5 13/16	32.40	32.40	6 1/2	3 3/4	6 1/4	6
2 1/2	30.00	30.00	6 5/8	3 1/4	7 3/8	50.00	50.00	7 1/2	4 5/16	7 3/8	7
3	46.00	46.00	8	3 3/4	9 1/16	69.00	69.00	8 7/8	4 5/8	9 1/16	7 1/2

Jenkins Bronze Regrinding Check Valves

Horizontal and Angle
Regrinding Bronze Disc—Union Cap

Screwed: 200 Pounds Steam Pressure at 550°F.
400 Pounds Non-Shock Cold Oil, Water, Gas Pressure
Flanged: 150 Pounds Steam Pressure at 550°F.
225 Pounds Non-Shock Cold Oil, Water, Gas Pressure

No. 756, Horizontal, Screwed

For the non-return control of steam, water, oil and gas. Suitable for use on condensate and return lines as well as for boiler feeds and traps.

Disc is made of high tensile bronze, carefully machined to a smooth finish to insure tight closure. Disc can be reground without taking valve from line.

	Screwed				Flanged				
Size In.	No. 756 Horiz. Each	No. 758 Angle Each	Horiz. End to End In.	Angle Ctr. to End In.	No. 757 Horiz. Each	No. 759 Angle Each	Horiz. Face to Face In.	Angle Ctr. to Face In.	Diam. Flge. In.
1/8	$2.00	$2.00	1 3/4	7/8	.....	.....	...	...	...
1/4	2.00	2.00	1 3/4	7/8	$10.50	$10.50	3	1 11/16	2 1/2
3/8	2.30	2.30	2	1	10.50	10.50	3 1/4	1 13/16	2 1/2
1/2	2.80	2.80	2 1/4	1 1/8	10.50	10.50	3 7/16	2 1/4	3 1/2
3/4	4.00	4.00	2 7/8	1 7/16	12.00	12.00	3 7/8	2 7/16	3 7/8
1	5.50	5.50	3 9/32	1 5/8	15.00	15.00	4 3/8	2 11/16	4 1/4
1 1/4	7.20	7.20	3 7/8	1 15/16	20.00	20.00	4 7/8	2 7/8	4 5/8
1 1/2	10.00	10.00	4 7/16	2 7/32	26.00	26.00	5 1/2	3 3/16	5
2	16.00	16.00	5 3/8	2 11/16	36.00	36.00	6 1/2	3 3/4	6
2 1/2	29.00	29.00	6 5/16	3 5/32	55.00	55.00	7 1/2	4 5/16	7
3	41.00	41.00	7 3/8	3 11/16	75.00	75.00	8 7/8	4 5/8	7 1/2

Jenkins Bronze Swing Check Valves

Horizontal—Renewable Composition Disc

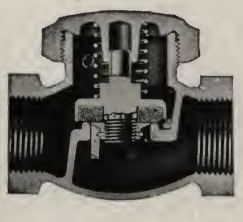
Screwed Ends
For 300 Lb. Non-Shock Cold Oil, Water, Gas Pressures
Flanged Ends
For 225 Lb. Non-Shock Cold Oil, Water, Gas Pressures

Screwed

Flanged

Size In.	No. 352, Screwed Each	End to End In.	No. 353, Flanged Each	Face to Face In.
1/4	$3.80	1 7/8	.....	...
3/8	4.00	2 7/16	.....	...
1/2	4.40	2 3/4	$12.00	3 1/16
3/4	5.80	3 5/16	14.00	3 5/8
1	7.80	3 13/16	16.00	4
1 1/4	11.00	4 1/4	25.00	4 3/8
1 1/2	14.30	4 7/8	30.00	4 7/8
2	21.40	5 3/4	45.00	6
2 1/2	40.00	6 5/8	69.00	6 3/4
3	60.00	7 3/4	98.00	7 1/2

No. 655-A Jenkins Bronze Spring Loaded Horizontal Check Valves



Screwed Ends:
For 150 Pounds Steam Pressure
For 300 Pounds Non-Shock Cold Oil, Water or Gas

For non-return control of water, air, oil or gas.

The use of a phosphor bronze spring holds the disc to the seat.

A one-piece cap that screws over the body, assists in quick disassembly for inspection and repairs.

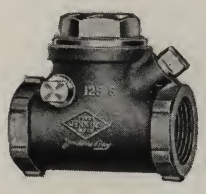
Size.in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Each..	$3.20	3.50	4.00	4.70	6.50	9.40	13.50	18.00

No. 92 Jenkins Bronze Swing Check Valves

Horizontal
Regrinding Bronze Disc—Screw-In Cap

Screwed Ends
125 Pounds Steam Pressure at 500°F.
250 Pounds Non-Shock Cold Oil, Water, Gas

Exceptionally serviceable for the non-return control of steam, oil, water and gas. Disc is made of high tensile bronze, carefully machined to a smooth finish.



Size Inches	Each	End to End Inches	Center to Top Inches
1/4	$4.50	2	1 7/16
3/8	4.50	2 1/8	1 7/16
1/2	4.80	2 3/8	1 9/16
3/4	5.40	2 13/16	1 27/32
1	5.60	3 5/16	2 5/32
1 1/4	7.30	3 13/16	2 7/16
1 1/2	9.50	4 1/4	2 23/32
2	13.50	5 1/4	3 9/32

Jenkins Bronze Regrinding Swing Check Valves

Horizontal

Screwed: 200 Pounds Steam at 550° F.
400 Pounds Non-Shock Cold Oil, Water, Gas Pressure
Flanged: 150 Pounds Steam at 550° F.
225 Pounds Non-Shock Cold Oil, Water, Gas Pressure

For condensate and return, feed and oil line service.

No. 762, Screwed

Size In.	No. 762, Screwed Each	End to End In.	No. 763, Flanged Each	Face to Face In.	Diam. Flge. In.
1/4	$6.25	2 1/8	.....	...	...
3/8	6.25	2 1/4	.....	...	...
1/2	6.60	2 1/2	.....	...	...
3/4	7.50	2 15/16	$24.00	4 3/8	3 7/8
1	8.00	3 7/16	25.00	5	4 1/4
1 1/4	11.00	3 15/16	34.00	5 1/2	4 5/8
1 1/2	14.00	4 3/8	42.00	6 1/16	5
2	20.00	5 3/8	70.00	7 5/16	6
2 1/2	38.00	6 3/16	100.00	8 5/16	7
3	51.00	7 1/16	123.00	9	7 1/2

Jenkins Bronze Swing Check Valves

Regrinding Bronze Disc—Screw-In Cap

Pressures
Screwed: 300 Pounds Steam at 550°F.
600 Pounds Non-Shock Cold oil, Water, Gas
Flanged: 300 Pounds Steam at 550°F.
500 Pounds Non-Shock Cold Oil, Water, Gas

No. 962 Screwed

No. 963 Flanged

For the non-return control of steam, oil, water and gas. Not recommended where flow pulsates violently.

Disc is made of high tensile bronze and can be reground easily without taking valve from the line.

Size Inches	No. 962 Screwed Each	End to End Inches	No. 963 Flanged Each	Face to Face Inches	Flange Diam. Inches
1/4	$6.80	2 1/4	.....	...	...
3/8	7.00	2 7/16	$15.00	3 7/8	3
1/2	7.70	2 11/16	18.00	4 9/16	3 3/4
3/4	9.00	3 1/4	20.00	5 3/8	4 5/8
1	10.00	3 7/8	26.00	5 7/8	4 7/8
1 1/4	14.00	4 3/8	36.00	6 5/16	5 1/4
1 1/2	19.00	4 3/4	54.00	7	6 1/8
2	27.00	5 5/8	75.00	8	6 1/2
2 1/2	49.00	6 5/8	110.00	9 1/8	7 1/2
3	75.00	7 1/2	140.00	9 15/16	8 1/4

No. 720 Jenkins Bronze Rapid Action Valves

For Liquids

Designed to eliminate water hammer. For laundry service, garages, etc.

Renewable composition disc.

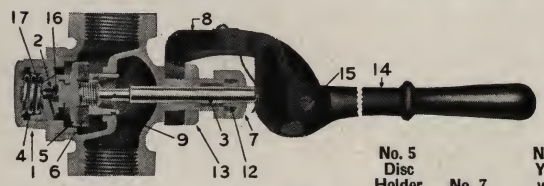
Bronze spindle with hardened steel tip, steel yoke, malleable iron lever with steel spring.

Opens full with pull of lever, and stays open without set screw or locking devices.

Size In.	Each	Size In.	Each
1/2	$14.00	1 1/2	$29.00
3/4	17.50	2	39.00
1	20.00	2 1/2	55.00
1 1/4	24.00	3	105.00

Parts for No. 720 Jenkins Bronze Rapid Action Valves

For 150 Pounds Non-Shock Hot or Cold Water Service



Size In.	No. 1 Cap Each	No. 2 Piston Each	No. 3 Spindle Each	No. 4 Spring Each	No. 5 Disc Holder with Disc Each	No. 7 Packing Nut Each	No. 8 Yoke with Spring & Screw Each
1/2	$2.25	$2.45	$.55	$.30	$1.30	$.35	$4.65
3/4	3.25	2.70	.80	.45	1.75	.35	5.10
1	3.90	2.85	.90	.60	2.00	.40	5.55
1 1/4	5.20	3.10	1.00	1.00	2.30	.45	6.10
1 1/2	6.50	3.65	1.10	1.15	2.90	.55	6.90
2	8.20	4.45	1.30	1.45	3.75	.55	10.50
2 1/2	13.50	5.60	1.55	2.80	5.90	.55	12.65
3	24.50	13.55	3.65	3.75	15.00	.65	21.90

Size In.	No. 9 Guide Disc Nut Each	No. 12 Gland Each	No. 13 Yoke Lock Nut Each	No. 14 Lever Each	No. 15 Lever Pin with Cotter Pin Each	No. 16 Piston Seat Plug Each	No. 17 Check Ball Each
1/2	$.40	$.06	$.35	$1.45	$.30	$.15	$.05
3/4	.60	.06	.45	1.80	.35	.15	.05
1	.70	.06	.50	2.10	.40	.15	.05
1 1/4	.75	.10	.60	2.45	.40	.15	.05
1 1/2	.90	.25	.65	2.80	.40	.15	.05
2	1.20	.25	.65	3.40	.50	.15	.05
2 1/2	1.80	.25	.65	4.30	1.25	.15	.05
3	6.25	.25	1.90	7.70	1.40	.15	.05

No. 376 Jenkins Quick-Opening Valves

Solid Wedge Sliding Spindle and Lever
For 200 Lb. Non-Shock Cold Oil, Water, Gas Pressure

Valve is of the double-faced solid wedge type. Guides cast in the body prevent chattering when partially open and keep wedge in line for perfect seating. Valve is opened by pull of lever.

A simple locking device secures spindle in any desired position.

Size.....in.	1/2	3/4	1
No. 376....ea.	$8.50	9.00	10.00
Size.....in.	1 1/4	1 1/2	2
No. 376....ea.	$12.50	17.00	24.00

Jenkins Bronze Gate Valves

Solid Wedge—Inside Screw—Non-Rising Spindle
125 Lb. Steam Pressure at 500°F.
200 Lb. Non-Shock Cold Oil, Water, Gas Pressure

No. 370 Screwed

Has a gland packing box. Fitted with a malleable iron, non-heat handwheel.

Size In.	No. 370, Screwed Each	No. 370, Screwed End to End In.	No. 371, Flanged Each	No. 371, Flanged Face to Face In.	No. 371, Flanged Diam. Flange In.
1/4	$2.40	1 3/4	.....	...	...
3/8	2.40	1 3/4	.....	...	...
1/2	2.60	1 15/16	.....	...	...
3/4	3.30	2 5/16	$14.00	3 3/8	3 7/8
1	4.40	2 11/16	16.00	3 15/16	4 1/4
1 1/4	6.00	3	19.50	4 1/2	4 5/8
1 1/2	8.00	3 3/8	24.00	4 7/8	5
2	11.00	4	37.50	5 3/4	6
2 1/2	19.00	4 11/16	49.00	6 1/2	7
3	28.00	5 3/8	57 50	7 3/8	7 1/2

Jenkins Bronze Gate Valves

Inside Screw—Traveling Spindle—Solid Wedge
125 Pounds Steam Pressure at 500°F.
200 Pounds Non-Shock Cold Oil, Water, Gas Pressure

No. 47, Screwed

Double face solid wedge type valve. Can be repacked under full pressure when in open or closed position.

Size In.	No. 47, Screwed Each	No. 47, Screwed End to End Inches	No. 48, Flanged Each	No. 48, Flanged Face to Face Inches	No. 48, Flanged Diam. Flg. In.
1/4	$2.40	1 3/4	.....	...	...
3/8	2.40	1 3/4	.....	...	...
1/2	2.60	1 15/16	.....	...	...
3/4	3.30	2 5/16	$14.00	3 3/8	3 7/8
1	4.40	2 11/16	16.00	3 15/16	4 1/4
1 1/4	6.00	3	19.50	4 1/2	4 5/8
1 1/2	8.00	3 3/8	24.00	4 7/8	5
2	11.00	4	37.50	5 3/4	6
2 1/2	19.00	4 11/16	49.00	6 1/2	7
3	28.00	5 3/8	57.50	7 3/8	7 1/2

Jenkins Bronze Gate Valves

Standard Pattern—Travelling Spindle
125 Pounds Steam Working Pressure at 500°F.
200 Pounds Oil, Water, Gas Working Pressure

No. 62 Screwed

These valves are of split wedge, travelling spindle type. Can be packed under full pressure when in open or closed position.

Size Inches	No. 62 Screwed Each	No. 62 Screwed End to End Inches	No. 63 Flanged Each	No. 63 Flanged Face to Face Inches	No. 63 Flanged Diam. Flge. In.
1/4	$2.40	1 3/4	.....	...	...
3/8	2.40	1 3/4	.....	...	...
1/2	2.60	1 15/16	.....	...	...
3/4	3.30	2 5/16	$14.00	3 3/8	3 7/8
1	4.40	2 11/16	16.00	3 15/16	4 1/4
1 1/4	6.00	3	19.50	4 1/2	4 5/8
1 1/2	8.00	3 3/8	24.00	4 7/8	5
2	11.00	4	37.50	5 3/4	6
2 1/2	19.00	4 11/16	49.00	6 1/2	7
3	28.00	5 3/8	57.50	7 3/8	7 1/2

No. 62-U Jenkins Bronze Gate Valves

Split Wedge—Union Bonnet—Traveling Spindle
Screwed Ends
125 Pounds Steam Pressure at 500°F.
200 Pounds Non-Shock Oil, Cold Water, Gas Pressure

Especially suitable for controlling light, volatile fluids which are difficult to handle.

Size Inches	Each	End to End Inches
1/2	$2.40	1 3/4
3/8	2.40	1 3/4
1/2	2.60	1 15/16
3/4	3.30	2 5/16
1	4.40	2 11/16
1 1/4	6.00	3
1 1/2	8.00	3 3/8
2	11.00	4
2 1/2	19.00	4 11/16
3	28.00	5 3/8

Jenkins Bronze Gate Valves

Solid Wedge—Inside Screw—Non-Rising Spindle

Screwed
150 Lb. Steam Pres. at 500°F.
300 Lb. Non-Shock Cold Oil, Water or Gas Pres.
Flanged
150 Lb. Steam Pres. at 550°F.
225 Lb. Non-Shock Cold Oil, Water or Gas Pres.

No. 670 Screwed

Size In.	No. 670, Screwed Each	E. to E. In.	No. 671, Flanged Each	F. to F. In.	Diam. Flange In.
1/4	$3.20	1 3/4	.....	...	...
3/8	3.20	1 3/4	.....	...	...
1/2	3.60	1 15/16	.....	...	...
3/4	4.20	2 5/16	$20.00	3 3/8	3 7/8
1	5.80	2 11/16	23.00	3 15/16	4 1/4
1 1/4	8.00	3	27.00	4 1/2	4 5/8
1 1/2	10.00	3 3/8	33.00	4 7/8	5
2	16.00	4	56.00	5 3/4	6
2 1/2	26.00	4 11/16	72.00	6 1/2	7
3	38.00	5 3/8	90.00	7 3/8	7 1/2

Jenkins Bronze Gate Valves

Solid Wedge—Inside Screw—Traveling Spindle

Screwed
150 Lb. Steam Pres. at 500°F.
300 Lb. Non-Shock Cold Oil, Water or Gas Pres.
Flanged
150 Lb. Steam Pres. at 500°F.
225 Lb. Non-Shock Cold Oil, Water or Gas Pres.

No. 49 Screwed

Size In.	No. 49, Screwed Each	E. to E. In.	No. 50, Flanged Each	F. to F. In.	Diam. Flange In.
1/4	$3.20	1 3/4	.....	...	...
3/8	3.20	1 3/4	.....	...	...
1/2	3.60	1 15/16	.....	...	...
3/4	4.20	2 5/16	$20.00	3 3/8	3 7/8
1	5.80	2 11/16	23.00	3 15/16	4 1/4
1 1/4	8.00	3	27.00	4 1/2	4 5/8
1 1/2	10.00	3 3/8	33.00	4 7/8	5
2	16.00	4	56.00	5 3/4	6
2 1/2	26.00	4 11/16	72.00	6 1/2	7
3	38.00	5 3/8	90.00	7 3/8	7 1/2

Jenkins Bronze Gate Valves

Inside Screw, Stationary Spindle

For 200 Pounds Steam Pressure at 500° F.
For 400 Pounds Non-Shock, Cold Oil, Water or Gas Pressure

Fig. 270

Spindle is of manganese bronze. Gland stuffing box can be repacked when valve is wide open and under pressure.

Size In.	No. 270 Screwed Each	No. 271 Flanged Each	Face to Face Flanged Inches	Diameter Flanges Inches
1/4	$3.90	.....	...	...
3/8	3.90	.....	...	...
1/2	4.60	.....	...	...
3/4	5.60	$23.00	3 11/16	4 5/8
1	8.00	28.00	4 1/4	4 7/8
1 1/4	10.00	33.00	4 3/4	5 1/4
1 1/2	13.20	43.00	5 1/16	6 1/8
2	21.50	62.00	6	6 1/2
2 1/2	31.00	85.00	6 13/16	7 1/2
3	50.00	110.00	8 1/2	8 1/4

Jenkins Bronze Gate Valves

Solid Wedge—Inside Screw—Non-Rising Spindle

Pressures:
Screwed—300 Pounds Steam at 550°F., 600 Pounds Non-Shock Cold Water or Gas
Flanged—300 Pounds Steam at 550°F., 500 Pounds Non-Shock Cold Water or Gas

No. 280

Manganese bronze spindle. With malleable iron, non-heat handwheel.

Size Inches	No. 280, Screwed Each	End to End, In.	No. 281, Flanged Each	Face to Face, In.	Diam. Flge., In.
1/4	$10.00	2 7/16	.....	...	...
3/8	10.00	2 7/16	.....	...	...
1/2	12.00	2 15/16	.....	...	...
3/4	14.40	3 5/16	$26.00	4 7/16	4 5/8
1	16.00	3 3/4	32.00	5	4 7/8
1 1/4	22.50	4 1/4	43.00	5 1/2	5 1/4
1 1/2	33.00	4 3/4	60.00	6	6 1/8
2	46.00	5 5/8	82.00	7 1/8	6 1/2
2 1/2	80.00	6 3/4	130.00	8 3/8	7 1/2
3	123.00	7 7/8	190.00	9 1/4	8 1/4

Jenkins Bronze Gate Valves

Rising Spindle—Outside Screw and Yoke

For 125 Pounds Steam Working Pressure at 500° F.
For 200 Pounds Non-Shock Cold Oil, Water or Gas Pressure

No.368,Screwed

The yoke is in one piece with the bonnet, and has gland stuffing box which can be repacked when valve is wide open.

Size Inches	Screwed No. 368 Each	End to End Inches	Flanged No. 369 Each	Face to Face Inches	Diam. Flan e Inches
3/4	$15.00	2 5/16	$23.00	3 3/8	3 7/8
1	17.00	2 11/16	25.00	3 15/16	4 1/4
1 1/4	20.00	3	28.00	4 1/2	4 5/8
1 1/2	25.00	3 3/8	35.00	4 7/8	5
2	33.00	4	52.00	5 3/4	6
2 1/2	50.00	4 11/16	66.00	6 1/2	7
3	83.00	5 3/8	90.00	7 3/8	7 1/2

Jenkins Bronze Gate Valves

Solid Wedge—Outside Screw and Yoke—Rising Spindle

200 Pounds Steam Pressure at 500°F.
400 Pounds Non-Shock Cold Oil, Water, Gas Pressure

No. 275, Screwed

Spindle rises through yoke sleeve, making operating threads easily accessible for lubrication and cleaning. Guides cast in body prevent chattering when partially open and keep wedge in line for perfect seating.

Size In.	No. 275, Screwed Each	End to End Inches	No. 276, Flanged Each	Face to Face Inches	Diam. Flange Inches
3/4	$15.00	2 7/8	$32.00	3 11/16	4 5/8
1	18.00	3 1/2	38.00	4 1/4	4 7/8
1 1/4	21.00	3 15/16	45.00	4 3/4	5 1/4
1 1/2	26.00	4 9/32	57.00	5 1/16	6 1/8
2	38.00	5 1/16	80.00	6	6 1/2
2 1/2	55.00	5 3/4	110.00	6 13/16	7 1/2
3	86.00	7	165.00	8 1/2	8 1/4

Jenkins Bronze Gate Valves

Outside Screw and Yoke Rising Spindle

For 300 Pounds Steam Pressure at 550°F.
For 500 Pounds Non-Shock Cold Oil, Water, and Gas Pressure

No. 282, Screwed

Size In.	No. 282, Screwed Each	End to End Inches	No. 283 Flanged Each	Face to Face Inches	Diam. Flanges Inches
3/4	$24.00	3 5/16	.....	...	...
1	26.00	3 3/4	$40.00	5	4 7/8
1 1/4	34.00	4 1/4	50.00	5 1/2	5 1/4
1 1/2	46.00	4 3/4	75.00	6	6 1/8
2	70.00	5 5/8	100.00	7 1/8	6 1/2
2 1/2	110.00	6 3/4	140.00	8 3/8	7 1/2
3	155.00	7 7/8	170.00	9 1/4	8 1/4

Jenkins Bronze Gate Valves

Solid Wedge

Inside Screw—Non-Rising Spindle

125 Lb. Steam Pressure at 500°F.
200 Lb. Non-Shock Cold Oil, Water, Gas Pressure

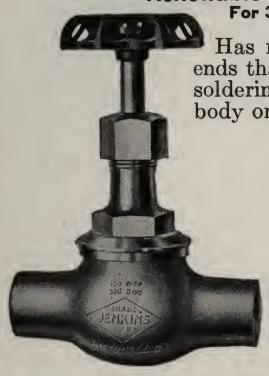
No. 675-A Flanged

Each valve individually tested under hydrostatic pressures in excess of its basic water rating.

Size In.	No. 674-A, Scrd. Each	End to End In.	No. 675-A, Flgd. Each	Face to Face In.	Flge. Diam. In.
3 1/2	$113.00	6 1/4	$132.65	6 1/4	8 1/2
4	132.65	6 1/2	152.30	6 1/2	9
5	179.30	7	206.35	7	10
6	211.35	7 3/4	245.65	7 3/4	11
8	326.70	9	375.80	9	13 1/2

No. 1200 Jenkins Bronze Globe Valves

Plain Solder Ends—For Copper Pipe
Renewable Composition Disc
For 300 Pounds Non-Shock Cold Water Working Pressure



Has rugged body casting with heavy ends that will stand heat encountered in soldering without danger of distorting body or warping seat.

Size In.	Each	O.D. Tube Inches	End to End, In.
1/4	....	9/16	2 7/8
3/8	....	11/16	3 1/4
1/2	....	27/32	3 11/16
3/4	....	1 3/32	4 7/16
1	....	1 3/8	5
1 1/4	....	1 5/8	5 9/16
1 1/2	....	1 29/32	6
2	....	2 7/16	7 1/4
2 1/2	....	3	8 1/2
3	....	3 1/2	10

No. 1202 Jenkins Bronze Angle Valves

With Solder Ends—For Copper Pipe
Renewable Composition Disc
For Working Pressures: 150 Pounds Steam 300 Pounds Oil, Water and Gas

This valve has a rugged body casting with heavy ends that will stand the heat encountered in soldering without danger of distorting the body or warping the seat.

Size In.	O.D. Tube In.	Each	Size In.	O.D. Tube In.	Each
1/4	.375	...	1 1/4	1.375	...
3/8	.500	...	1 1/2	1.625	...
1/2	.625	...	2	2.125	...
3/4	.875	...	2 1/2	2.625	...
1	1.125	...	3	3.125	...

No. 1222 Jenkins Bronze Regrinding Swing Check Valves

Plain Solder Ends—For Copper Pipe
For 300 Pounds Non-Shock Cold Water Working Pressure

Has rugged body casting with heavy ends that will stand the heat encountered in soldering without danger of distorting the body or warping the seats.

Size In.	Each	O.D. Tube In.	End to End, In.
1/4	....	9/16	2 3/4
3/8	....	11/16	3
1/2	....	27/32	3 1/4
3/4	....	1 3/32	4
1	....	1 3/8	4 5/8
1 1/4	....	1 5/8	5 1/8
1 1/2	....	1 29/32	5 5/8
2	....	2 7/16	6 7/8
2 1/2	....	3	8
3	....	3 1/2	9

No. 1220 Jenkins Bronze Horizontal Check Valves

With Solder Ends—For Copper Pipe

Renewable Composition Disc

For 300 Pounds Non-Shock Cold Water Pressure

This valve has a rugged body casting with heavy ends that will stand the heat encountered in soldering.

Size In.	Each	O.D. Tube In.	Size In.	Each	O.D. Tube In.
1/4	....	9/16	1 1/4	....	1 5/8
3/8	....	11/16	1 1/2	....	1 29/32
1/2	....	27/32	2	....	2 7/16
3/4	....	1 3/32	2 1/2	....	3
1	....	1 3/8	3	....	3 1/2

No. 1240 Jenkins Bronze Gate Valves

Plain Solder Ends—For Copper Pipe
Inside Screw—Non-Rising Spindle
For 200 Pounds Non-Shock Cold Water Working Pressure

Has rugged body casting with heavy ends that will stand the heat encountered in soldering without danger of distorting body or warping seat.

Size In.	Each	O.D. Tube In.	End to End, In.
3/8	....	11/16	2 3/16
1/2	....	27/32	2 9/16
3/4	....	1 3/32	3
1	....	1 3/8	3 1/4
1 1/4	....	1 5/8	3 1/2
1 1/2	....	1 29/32	3 7/8
2	....	2 7/16	4 1/2
2 1/2	....	3	5 1/8
3	....	3 1/2	5 7/8

Jenkins Bronze Solder End Gate Valves

Solid Wedge

Plain Ends
200 Pounds Non-Shock Cold Water Pressure

No. 1241

The extra strong, extra thick body will not distort nor will the seats warp under the temperatures encountered in soldering.

Solid wedge has double tapered faces free of projections, making it easy to reface.

No. 1241 has inside screw, non-rising spindle, and a boss in the body fitted with waste plug for draining and waste removal.

No. 1244 has outside screw and yoke, one-piece yoke bonnet and rising spindle.

No. 1244

Size In.	O.D. Tube Ends In.	Lgth. Bore In.	Diam. Bore In.	End To End Inches No. 1241	End To End Inches No. 1244
3/8	11/16	11/16	.503	2 5/8	...
1/2	27/32	13/16	.628	2 15/16	...
3/4	1 3/32	1	.878	3 3/8	3
1	1 3/8	1 1/16	1.129	3 5/8	3 1/4
1 1/4	1 5/8	1 1/8	1.379	4	3 1/2
1 1/2	1 29/32	1 3/16	1.629	4 1/4	3 7/8
2	2 7/16	1 3/8	2.129	4 3/4	4 1/2
2 1/2	3	1 5/8	2.627	5 1/8	5 1/8
3	3 1/2	1 7/8	3.127	5 7/8	5 7/8

Prices upon request.

Jenkins Bronze Hose Gate Valves

Solid Wedge—Inside Screw—Non-Rising Spindle
175 Pounds Non-Shock Cold Water Pressure
800 Pounds Hydrostatic Test Pressure

No. 707

Underwriters' pattern. Approved by National Board of Fire Underwriters' and Associated Factory Mutual Fire Insurance Companies.

Hose end of valve is threaded with Eastern Standard threads, unless otherwise specified; inlet end threaded for standard iron pipe. For threads of special diameter an additional charge will be made. When so ordered, send sample of male end hose coupling to serve as gage.

Size Inches	No. 707 With Boss Only Each	No. 708 With Drip Cock Each	Center to End Inlet Inches	Center to End Outlet Inches
1 1/2	$16.00	$18.00	1 5/8	2 1/4
2 1/2	35.00	36.00	2 1/4	2 1/2

No. 372 Jenkins Bronze Hose Gate Valves

Screwed Inlet, Thread on Outlet for Hose Connection Without Cap and Chain

For 200 Pounds Working Water Pressure

Size In.	No. 1-A *Rough Body Fin. Trimmings Each	No. 1 Rough Body Fin. Trimmings Each	No. 2 Fin. All Over Each	No. 4 Rough Body N. P. All Over Each	No. 5 Fin. and N. P. All Over Each
½,¾	$5.90	$8.90	$12.50	$10.00	$14.00
1	6.70	10.40	13.80	12.00	15.00
1¼	9.40	13.70	18.20	15.00	20.00
1½	12.50	17.70	23.70	20.00	26.00
2	18.00	24.60	34.60	27.00	37.00
2½	30.00	37.40	52.00	40.00	55.00
3	42.00	52.00	72.00	56.00	77.00

*Iron wheel. Bronze wheel on all others.

No. 374 Jenkins Bronze Hose Gate Valves

Screwed Inlet, Threaded on Outlet for Hose Connection With Cap and Chain

For 200 Pounds Working Water Pressure

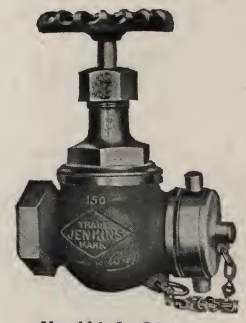
Size In.	*Rough Body Fin. Trimmings Each	Rough Body Fin. Trimmings Each	Fin. All Over Each	Rough Body N.P. All Over Each	Fin. and N.P. All Over Each
½,¾	$10.00	$12.00	$16.00	$14.00	$18.00
1	13.00	16.50	21.00	18.00	19.00
1¼	16.00	21.00	26.00	23.00	24.00
1½	21.00	27.00	34.00	29.00	31.00
2	25.00	31.00	41.00	33.00	44.00
2½	40.00	47.00	60.00	49.00	65.00
3	60.00	68.00	90.00	70.00	90.00

*Iron wheel. All others have bronze wheel.

Jenkins Bronze Hose Globe and Angle Valves

With Cap and Chain—Screwed Inlet—Hose Outlet

300 Pounds Maximum Non-Shock Cold Water Pressure



No. 114-A, Globe

No. 114, Angle

Fitted with Jenkins Discs of resilient rubber composition especially adapted for cold water service.

Finishes are as follows: No. 1-A, rough body, finished trimming, and iron wheel; No. 1, rough body, finished trimming and bronze wheel; No. 2, finished all over, with bronze wheel; No. 4, rough body, nickel-plated all over, and bronze wheel; and No. 5, finished and nickel-plated all over, with bronze wheel.

Globe or Angle

Size In.	Finish: No. 1-A Each	No. 1 Each	No. 2 Each	No. 4 Each	No. 5 Each
¾	$8.50	$9.70	$10.00	$11.30	$12.00
1	10.00	11.80	12.50	13.00	14.00
1¼	13.00	14.70	15.40	16.40	17.00
1½	18.00	20.00	20.00	22.00	22.60
2	28.00	31.00	32.00	31.60	32.00
2½	41.00	46.00	48.00	51.00	52.00
3	56.00	62.00	63.00	68.00	70.00

No. 358 Bronze Hose Gate Valves

Adjustable Double Discs—Non-Rising Stem

Iron wheel handle, rough body and polished trimmings. For polished body, or chromium plating, prices upon request.

150 Pounds Working Pressure

Inlet Inches	Outlet Inches	Brass Trimming Each	Nickel Plated Trimming Each
1	1¼	$8.50	$10.00
1	1½	8.50	10.00
1¼	1¼	9.40	11.00
1½	1½	12.50	14.00
2	2	18.00	19.50
2½	2½	30.00	32.00
For Pressures over 150 Pounds			
1	1½	$12.50	$14.00
1½	1½	16.50	18.00
2½	2½	36.00	38.00

Alenco Regular Fire Line Angle Hose Valves

Working Pressures Up to 125 Lb.—300 Lb. Hydraulic Test

Full water way, renewable soft rubber disc. Valves 2x1½ inches can be furnished with 2-inch inlets and 1½-inch outlets; also 1½-inch valves with inlet bushed to 1 inch.

No. 170 with male hose connection.
No. 171 with female hose connection.

No. 171

Rough Body, Polished Trimmings, Red Iron Wheel Handle

Size....in.	1¼	1½	2	2x1½	2½
Brass..ea.	$5.30	$7.20	$9.80	$11.10	$12.20
N.P...ea.	6.20	8.20	10.90	12.20	13.50
C.P...ea.	6.80	8.90	11.70	13.30	14.60

Finished Body, Polished Trimmings, Finished Brass Wheel Handle

Size...in.	1¼	1½	2	2x1½	2½
Brass..ea.	$8.30	$10.10	$13.00	$15.20	$16.10
N.P...ea.	9.10	11.10	14.10	16.40	17.40
C.P...ea.	9.80	11.90	14.90	17.40	18.50

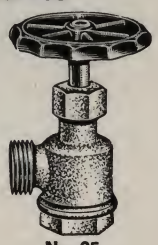
Allen Brass Garden Hose Valves

No. 173
California

The body is made of cast brass.

Leather disc.

Enameled cast iron wheel finished in red.



No. 25
Straight

	No. 173 California				No. 25 Straight
I.P.T. Inlet.....inches	½	¾	1	1	¾
H.P.T. Outlet.....inches	¾	¾	¾	*1	¾
Each.....	$.92	.50	1.50	1.50	.92
Weight.....lb.	15/16	⅞	1⅜	1½	⅞

*Iron pipe thread.

No. 172 Chicago Pattern Brass Hose Valves

Furnished with rough body, tee handles and leather discs, in either hose or iron pipe thread on hose end and iron pipe thread on lower end invariably. The 2½-inch size only can also be had with any fire department thread in hose end.

Valves with wheel handles or with soft rubber discs at slight additional charge. Valves nickel-plated at extra charge.

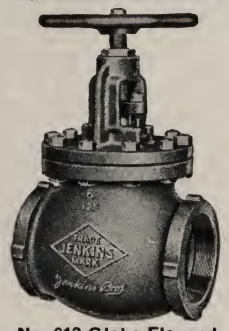
With wheel handle, 50 cents extra.

Size.....inches	1x1	1¼x1¼	1½x1½	2x2	2½x2½
No. 172.....each	$3.15	3.70	4.75	7.00	8.50

Jenkins Iron Body Globe and Angle Valves

Regrind—Renew—Regrinding Disc and Seat Ring Outside Screw and Yoke

125 Pounds Steam Pressure at 450° F.
200 Pounds Non-Shock Cold Oil, Water, Gas Pressure



No. 613 Globe Flanged

No. 615, Angle Flanged

Sturdy through bonnet bolts cannot corrode or shear off. A high pressure asbestos gasket fits into a recess in body assuring perfect seal between body and bonnet. Center guide stem of disc fits perfectly into guide in seat ring assuring concentric seating.

Body, bonnet, and all ferrous parts are made of semi-steel gray iron with an average tensile strength of almost 35,000 pounds per square inch.

	Screwed			Flanged			
Size In.	No. 612 Globe No. 614 Angle Each	No. 612 End to End In.	No. 614 Center to End Inches	No. 613 Globe No. 615 Angle Each	No. 613 Face to Face In.	No. 615 Center to Face Inches	Diam. Flange Inches
2	$7.00	7	3½	$8.60	8	4	6
2½	9.00	8	4	10.75	8½	4¼	7
3	12.50	8¾	4⅜	15.00	9½	4¾	7½
3½	15.25	9⅜	...	18.50	10½	...	8½
4	19.00	10	5	22.50	11½	5¾	9
5	27.00	12	...	31.00	13	...	10
6	37.50	13⅜	6 11/16	42.00	14	7	11

Jenkins Iron Body Globe and Angle Valves

Renewable Composition Disc—Bronze Seat Ring Outside Screw and Yoke

150 Pounds Steam Pressure
250 Pounds Non-Shock Cold Oil, Water, Gas Pressure

No. 141 Globe, Screwed

No. 144 Angle, Flanged

For the control of steam, fluids and gases where drop-tight closure is essential.

Has wide yoke, giving access to packing box which can be packed under full pressure when valve is wide open.

	Screwed			Flanged			
Size In.	No. 141 Globe, No. 143 Angle Each	End to End In.	Ctr. to End In.	No. 142 Globe, No. 144 Angle Each	Face to Face In.	Ctr. to Face In.	Diam. Flge. In.
2	$10.00	6½	3½	$11.75	7⅛	3⅞	6
2½	12.00	7¾	3⅞	14.00	8	4½	7
3	16.75	9⅜	4 11/16	18.50	9¼	4⅝	7½

Jenkins Regrind-Renew Iron Body Globe and Angle Valves

Regrinding Disc and Seat Ring—Union Bonnet

Screwed Ends
150 Pounds Steam Pressure at 450°F.
250 Pounds Non-Shock Cold Oil, Water, Gas Pressure

No. 890 Globe

No. 892 Angle

The bevel-type nickel alloy disc is particularly able to withstand hard usage.

Disc can be reground without removing valve from line. Seat ring and disc are renewable.

Union bonnet is easy to dismantle and reassemble, facilitating regrinding operation. Each valve is individually tested at the factory under hydrostatic pressures in excess of its basic rating.

	No. 890 Globe		No. 892 Angle	
Size Inches	Each	End to End Inches	Each	Center to End Inches
⅜	$3.60	2⅝	$3.60	1 5/16
½	4.00	3	4.00	1½
¾	5.00	3⅝	5.00	1 13/16
1	6.00	4⅛	6.00	2 1/16
1¼	8.60	4⅝	8.60	2 5/16
1½	12.00	5¼	12.00	2⅝
2	19.00	6 5/16	19.00	3 5/32

Jenkins Iron Body Globe and Angle Valves

Regrind-Renew—Union Bonnet

Screwed Ends
150 Pounds Steam Pressure at 450°F.
250 Pounds Non-Shock Cold Oil, Water, Gas Pressure

No. 894, Globe

No. 895, Angle

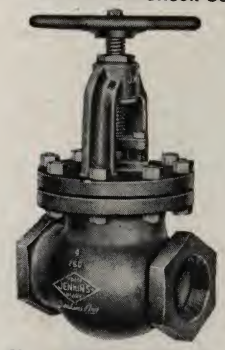
Used to control steam, oil, water and gas where service is severe, tightness is essential and operation is frequent. Metal plug is removable in a vise.

Union bonnet is easy to dismantle and reassemble, facilitating regrinding operation. Regularly supplied with stainless steel seat ring and plug. Each valve individually tested under pressures exceeding its rating.

	No. 894, Globe		No. 895, Angle	
Size Inches	Each	End to End Inches	Each	Center to End Inches
⅜	$4.20	2⅝	$4.20	1 5/16
½	4.50	3	4.50	1½
¾	6.10	3⅝	6.10	1 13/16
1	7.50	4⅛	7.50	2 1/16
1¼	10.50	4⅝	10.50	2 5/16
1½	15.00	5¼	15.00	2⅝
2	23.00	6 5/16	23.00	3 5/32

Jenkins Iron Body Globe and Angle Valves

Bronze Mounted—Renewable Metal Disc
Renewable Bronze Seat Ring
250 Lb. Steam Pressure
500 Lb. Non-Shock Cold Oil, Water, Gas Pressure



No. 162A Globe, Screwed

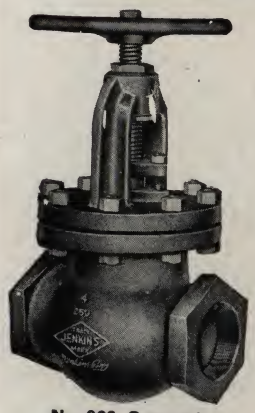
No. 163A Angle, Screwed

Bodies and yokes are made of high grade cast iron; spindles, of manganese bronze. Made for maximum strength and rigidity. Will withstand strains due to expansion, contraction of piping, and varying pressures and temperatures.

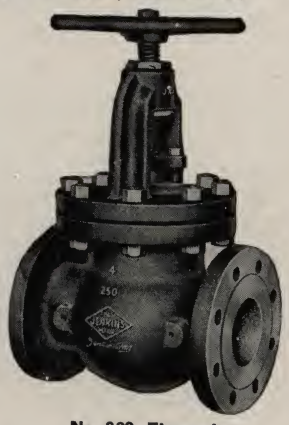
	Screwed			Flanged			
Size Inches	No. 162A Globe No. 163A Angle Each	Globe End to End Inches	Angle Center to End Inches	No. 162 Globe No. 163 Angle Each	Globe Face to Face Inches	Angle Center to Face Inches	Diam. Flange Inches
2	$26.00	7¾	3⅞	$29.00	10½	5¼	6½
2½	31.00	9	4½	34.00	11½	5¾	7½
3	39.00	10¼	5⅛	42.00	12½	6¼	8¼
3½	45.00	11½	5¾	48.00	13¼	6⅝	9
4	61.00	12¾	6⅜	64.00	14	7	10
5	84.00	15	7½	88.00	15¾	7⅞	11
6	111.00	17	8½	116.00	17½	8¾	12½
8	175.00	19½	9¾	175.00	21	10½	15
10	286.00	23	11½	286.00	24½	12¼	17½
12	365.00	26	13	365.00	28	14	20½

Jenkins Regrind-Renew Iron Body Globe Valves

Regrinding Bevel Seat Ring and Disc
Outside Screw and Yoke
250 Pounds Steam Pressure at 450°F.
500 Pounds Non-Shock Cold Oil, Water, Gas Pressure



No. 922, Screwed



No. 923, Flanged

	No. 922, Screwed		No. 923, Flanged		
Size Inches	Each	End to End Inches	Each	Face to Face Inches	Diam. Flanges Inches
2	$26.00	7¾	$29.00	10½	6½
2½	31.00	9	34.00	11½	7½
3	39.00	10¼	42.00	12½	8¼
3½	45.00	11½	48.00	13¼	9
4	61.00	12¾	64.00	14	10
5	84.00	15	88.00	15¾	11
6	111.00	17	116.00	17½	12½
8	175.00	19½	175.00	21	15
10	286.00	23	286.00	24½	17½
12	365.00	26	365.00	28	20½

Jenkins All-Iron Globe and Angle Valves

Renewable Composition Disc—Bolted Bonnet
200 Pounds Non-Shock Liquid Pressure at Normal Temperatures

For mild acid service. Capable of controlling acids, alkalies, caustics, creosote, oils, chemicals and other liquids which, because of their corrosive qualities, would prove harmful to bronze valves.

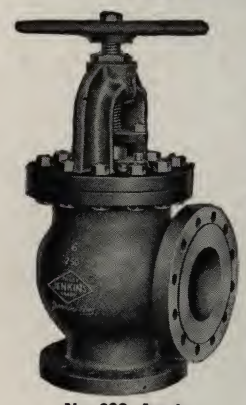
Disc can be replaced without removing valve from line.

No. 75DA, Globe Screwed

	Screwed			Flanged			
Size In.	No. 75DA Globe No. 77DA Angle Each	End to End In.	Ctr. to End In.	No. 76DA Globe No. 78DA Angle Each	Face to Face In.	Ctr. to Face In.	Diam. Flg. In.
½	$6.00	3	1½	$8.30	3¾	2⅜	3½
¾	8.00	3⅝	1 13/16	10.30	3⅞	2⅝	3⅞
1	11.00	4⅛	2 1/16	13.30	4½	2 13/16	4¼
1¼	13.00	4⅝	2 5/16	16.00	5	3 1/16	4⅝
1½	17.00	5¼	2⅝	20.35	5 5/16	3⅜	5

Jenkins Iron Body Globe and Angle Stop and Check Valves

Non-Return—Automatic Equalizing
Bronze Disc and Renewable Seat Ring—Outside Screw and Yoke
Flanged Ends
For 250 Pounds Steam Pressure at 450°F.



No. 293, Angle

A bronze mounted valve exceptionally serviceable on boilers where it acts as both a non-return and stop valve.

Will automatically cut out of the line a boiler under lower pressure than the others; should a bursting tube or some other form of rupture suddenly reduce the pressure in one unit, it will instantly check the flow of steam from the header into that boiler.

Disc assembly is not affixed to spindle. When in fully opened position, it is free to rise easily on the outflow of steam and return automatically to check reverse flow. To prevent chattering, action of the disc is cushioned by a piston operating in a dash pot made entirely of bronze to eliminate danger of corrosion and consequent sticking. All pressure-containing parts made of semi-steel exceeding A.S.T.M. standards.

Must be installed with spindle vertical.

Size Inches	No. 291 Globe No. 293 Angle Each	Globe Face to Face Inches	Angle Ctr. to Face Inches	Diam. Flange Inches	Thick. Flange Inches
3	$50.00	12½	6¼	8¼	1⅛
4	60.00	14	7	10	1¼
5	80.00	15¾	7⅞	11	1⅜
6	95.00	17½	8¾	12½	1 7/16
8	145.00	21	10½	15	1⅝
10	240.00	24½	12¼	17½	1⅞

Jenkins Regrind-Renew Iron Body Lift Check Valves

Horizontal and Angle
Regrinding Disc and Seat Ring—Union Cap
Screwed Ends
150 Pounds Steam Pressure at 450°F.
250 Pounds Non-Shock Cold Oil, Water, Gas Pressure

Fitted with nickel-alloy disc and seat ring. Disc can be reground without taking valve from line.

No. 896, Horizontal

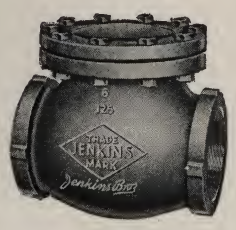
	No. 896 Horizontal		No. 898 Angle	
Size In.	Each	End to End Inches	Each	Center to End Inches
⅜	$3.40	2⅝	$3.40	1 5/16
½	3.60	3	3.60	1½
¾	4.40	3⅝	4.40	1 13/16
1	5.60	4⅛	5.60	2 1/16
1¼	8.00	4⅝	8.00	2 5/16
1½	11.00	5¼	11.00	2⅝
2	18.00	6 5/16	18.00	3 5/32

Jenkins Iron Body Lift Check Valves

Horizontal and Angle

Regrinding Bronze Seat Ring and Disc—Bolted Cover

125 Pounds Steam Pressure at 450°F.
200 Pounds Non-Shock Cold Oil, Water, Gas



No. 617, Horizontal Screwed

No. 620, Angle Flanged

Disc can be reground without removing valve from line.

Size In.	Screwed: No. 617 Horiz. Each	Screwed: No. 619 Angle Each	Screwed: Horiz. End to End In.	Screwed: Angle Ctr. to End In.	Flanged: No. 618 Horiz. Each	Flanged: No. 620 Angle Each	Flanged: Horiz. Face to Face In.	Flanged: Angle Ctr. to Face In.	Flanged: Diam. Flange In.
2	$3.60	$3.60	7	3½	$6.00	$6.00	8	4	6
2½	6.50	6.50	8	4	8.25	8.25	8½	4¼	7
3	8.90	8.90	8¾	4⅜	11.50	11.50	9½	4¾	7½
3½	12.25	....	9⅜	....	15.50	.....	10½	...	8½
4	14.25	14.25	10	5	18.00	18.00	11½	5¾	9
5	22.00	.....	12	....	26.00	.....	13	...	10
6	30.00	30.00	13⅜	6 11/16	35.00	35.00	14	7	11

Jenkins Regrind-Renew Iron Body Lift Check Valves

Horizontal and Angle

Regrinding Bronze Seat Ring and Disc

250 Pounds Steam Pressure at 450°F.
500 Pounds Non-Shock Cold Oil, Water, Gas Pressure

No. 934, Horizontal, Screwed

No. 937, Angle, Flanged

Serviceable for the non-return control of steam, air, water, oil and gas. Bolted cover enables them to withstand rigorous service.

Disc and seat ring are bronze, and renewable as required. Disc can be reground without removing the valve from the line.

Each valve individually tested at factory.

Size In.	Horizontal: No. 934, Screwed Each	Horizontal: No. 934, Screwed End to End In.	Horizontal: No. 935, Flanged Each	Horizontal: No. 935, Flanged Face to Face In.	Angle: No. 936, Screwed Each	Angle: No. 936, Screwed Ctr. to End In.	Angle: No. 937, Flanged Each	Angle: No. 937, Flanged Ctr. to Face In.	Angle: No. 937, Flanged Diam. Flge. In.
2	$28.00	7¾	$30.00	10½	$28.00	3⅞	$30.00	5¼	6½
2½	31.00	9	35.00	11½	31.00	4½	35.00	5¾	7½
3	39.00	10¼	42.00	12½	39.00	5⅛	42.00	6¼	8¼
3½	48.00	11½	51.00	13¼	48.00	5¾	51.00	6⅝	9
4	62.00	12¾	66.00	14	62.00	6⅜	66.00	7	10
5	84.00	15	88.00	15¾	84.00	7½	88.00	7⅞	11
6	118.50	17	122.00	17½	118.50	8½	122.00	8¾	12½

Jenkins Iron Body Lift Check Valves

Horizontal, Angle and Vertical

Renewable Bronze Seat Ring and Composition Disc

150 Pounds Steam Pressure
250 Pounds Non-Shock Cold Oil, Water, Gas Pressure

No. 151, Horizontal Screwed

Regularly fitted with Jenkins composition disc for cold water service. Disc for other services will be supplied as ordered. All pressure-containing parts are semi-steel, exceeding A.S.T.M. standards and will ably withstand varying pressures and temperatures.

Size In.	Screwed: 151, Horiz. 152, Angle 152A, Vert. Each	Screwed: End to End In.	Screwed: Ctr. to End In.	Flanged: 153, Horiz. 153A, Angle 153B, Vert. Each	Flanged: Face to Face In.	Flanged: Ctr. to Face In.	Flanged: Diam. Flange Inches
2	$10.00	6½	3½	$12.50	7⅛	3⅞	6
2½	13.75	7¾	3⅞	16.25	8	4½	7
3	17.50	9⅜	4 11/16	20.75	9¼	4⅝	7½

No. 266 Horizontal Flanged

Jenkins Iron Body Check Valves

For 250 Pounds Steam Pressure For 500 Pounds Non-Shock Cold Oil, Water, Gas

No. 265, Horizontal, Screwed
No. 266, Horizontal, Flanged
No. 267, Angle, Screwed
No. 268, Angle, Flanged

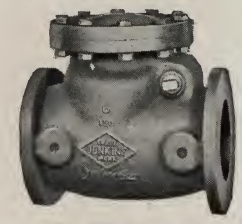
Size In.	Screwed: Each	Screwed: No. 265 End to End, In.	Screwed: No. 267 Ctr. to End, In.	Flanged: Each	Flanged: No. 266 Face to Face, In.	Flanged: No. 268 Ctr. to Face, In.	Flanged: Diam. Flanges In.
2	$28.00	7¾	3⅞	$30.00	10½	5¼	6½
2½	31.00	9	4½	35.00	11½	5¾	7½
3	39.00	10¼	5⅛	42.00	12½	6¼	8¼
3½	48.00	11½	5¾	51.00	13¼	6⅝	9
4	62.00	12¾	6⅜	66.00	14	7	10
5	84.00	15	7½	88.00	15¾	7⅞	11
6	118.50	17	8½	122.00	17½	8¾	12½

Jenkins Iron Body Swing Check Valves

Bronze Mounted—Renewable Seat Ring—Composition Disc

150 Pounds Steam Pressure
250 Pounds Non-Shock Cold Oil, Water or Gas Pressure

No. 294, Screwed



No. 295, Flanged

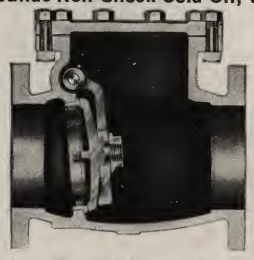
Especially serviceable for the non-return control of hot and cold water, oil, air and gas. Equipped with a renewable bronze seat ring and composition disc.

All pressure-containing parts are semi-steel, exceeding A.S.T.M. standards. Withstands varying pressures and temperatures of fluids in the line as well as expansion and contraction strains.

Size In.	No. 294, Screwed Each	No. 294, Screwed End to End In.	No. 295, Flanged Each	No. 295, Flanged Face to Face In.	No. 295, Flanged Diam. Flge. In.
2	$22.00	7¾	$26.00	8	6
2½	22.00	9¾	26.00	10	7
3	25.00	10¾	30.00	11	7½

Jenkins Iron Body Regrinding Swing Check Valves

For 125 Pounds Steam at 450°F
For 200 Pounds Non-Shock Cold Oil, Water, Gas



No. 624, Flanged

Heavy duty bronze disc can be easily removed and inspected by removing the bronze side plugs and hanger pin. No loose seat ring in this valve, as seat rings screw securely into body. This feature also permits seat ring to be removed and replaced when necessary. Even distribution of body metal throughout assures no weak spots.

Seating surfaces can be repeatedly reground, resulting in longer life of the valve.

	Screwed		Flanged			
Size In.	No. 623 Each	End to End In.	No. 624 Each	Face to Face In.	Diam. Flange Inches	Center to Top of Cap Inches
2	$11.00	6½	$13.00	8	6	4 3/16
2½	12.00	6⅞	14.50	8½	7	5 1/16
3	13.50	7½	17.00	9½	7½	5½
3½	17.50	8⅝	21.00	10½	8½	6
4	20.00	9⅜	24.00	11½	9	6 5/16
5	30.00	11¼	34.00	13	10	7⅝
6	36.00	12½	41.00	14	11	8⅛

No. 627 Jenkins Iron Body Swing Check Valves

Regrind—Renew—Horizontal
Renewable Bronze Seat Ring and Disc
Hub Ends
For 175 Pounds Non-Shock Cold Water Pressure
300 Pounds Hydrostatic Test

Carries approval of National Board of Fire Underwriters' and Associated Factory Mutual Fire Insurance Companies.

Size Inches	Each	End to End Inches	I.D. Hub Inches
2½	$29.00	12	3.75
3	33.00	13½	4.75
4	47.00	17	5.70
5	66.00	18½	6.75
6	78.00	21	7.80
8	143.00	23	10.00
10	217.00	26	12.10
12	314.00	30	14.20

No. 338, Screwed

Jenkins Iron Body Swing Check Valves

Renewable Bronze Seat Ring and Composition Disc
250 Pounds Steam Pressure
500 Pounds Non-Shock Cold Oil, Water, Gas Pressure

Used in horizontal and vertical positions for non-return control of hot and cold water, oil, air, and gas.

	No. 338, Screwed		No. 339, Flanged		
Size Inches	Each	E. to E. Inches	Each	F. to F. Inches	Diam. Flge. In.
2	$25.00	7¾	$28.00	10½	6½
2½	33.00	9	37.00	11½	7½
3	46.00	10¼	50.00	12½	8¼
3½	60.00	11½	63.00	13¼	9
4	68.00	12¾	73.00	14	10
5	89.00	15	94.00	15¾	11
6	109.00	17	116.00	17½	12½
8	165.00	19½	173.00	21	15

Jenkins Iron Body Quick Opening Gate Valves

With Sliding Spindle and Lever
Solid Wedge—Bronze Mounted
For 125 Pounds Steam Pressure at 450°F.
For 200 Pounds Non-Shock Cold Oil, Water, Gas Pressure

No. 334, Screwed

For control of fluids at modately low pressure where quick operation is essential.

This valve is of the double face solid wedge type and has renewable bronze seat rings.

Guides cast in the body prevent chattering when the valve is partially open and keep wedge from touching seats until at point of final closing. When fully opened, the wedge is entirely removed from the line of flow.

Flanges are made in accordance with American Standard dimensions and unless otherwise specified, are furnished faced and drilled.

Wedges in sizes 2 to 3 inches are cast of solid bronze; in sizes 3½ to 8 inches of iron with bronze faces rolled in.

	No. 334, Screwed		No. 335, Flanged		
Size Inches	Each	End to End Inches	Each	Face to Face Inches	Diam. Flanges Inches
2	$17.50	5 7/16	$19.50	7	6
2½	19.00	5⅞	21.00	7½	7
3	22.00	6⅜	24.50	8	7½
3½	25.00	7	27.50	8½	8½
4	30.00	7½	34.00	9	9
5	42.00	8⅛	46.00	10	10
6	48.00	8½	52.00	10½	11
8	80.00	10¼	84.00	11½	13½

Jenkins U-Bolt Gate Valves

Solid Wedge—Inside Screw—Traveling Spindle

Screwed
150 Pounds Steam Pressure at 450°F.
225 Pounds Non-Shock Cold Oil, Water, Gas Pressure

Flanged
125 Pounds Steam Pressure at 450°F.
175 Pounds Non-Shock Cold Oil, Water, Gas Pressure

No. 40A

Bonnet-Saver-Bushing makes possible the cleaning out of any deposits that may have caked or become lodged in the bonnet.

Channels are cast in the bonnet to permit complete drainage when the valve is wide open and the pipe line drained, thus preventing freezing.

All iron valves equipped with traveling steel spindle, iron body bronze mounted valves equipped with traveling bronze spindle.

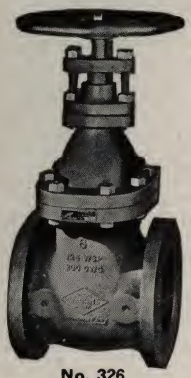
No. 42A

	Screwed			Flanged			
Size In.	No. 40A All Iron Each	No. 42A Iron Body Bronze Mounted Each	End to End Inches	No. 41A All Iron Each	No. 43A Iron Body Bronze Mounted Each	Face to Face Inches	Diam. Flange Inches
¼	$4.00	$3.50	1⅞	.....	.....	...	...
⅜	4.00	3.50	1⅞	.....	.....	...	...
½	4.20	3.70	2½	.....	.....	...	...
¾	4.80	4.50	2¾	.....	.....	...	...
1	5.50	5.00	3	.....	.....	...	...
1¼	6.30	6.00	3½	.....	.....	...	...
1½	7.00	7.00	3⅞	$19.00	$18.00	6	9/16
2	10.00	10.00	4⅜	20.00	20.00	7	⅝
2½	16.00	17.00	4⅞	29.00	30.00	7½	11/16
3	20.00	21.00	5½	35.00	37.00	8	¾

Jenkins Iron Body Gate Valves

Bronze Mounted—Inside Screw—Solid Wedge

Non-Rising Spindle



No. 326 Flanged

Pressures:
2 to 12-Inch
125 Pounds Steam at 450°F. or 200 Pounds Non-Shock Cold Oil, Water, Gas
14 and 16-inch
125 Pounds Steam at 450°F. or 150 Pounds Non-Shock Cold Oil, Water, Gas
18 to 24-Inch
Steel Valves Recommended for Steam Service for 150 Pounds Non-Shock Cold Oil, Water, Gas

Double face solid wedge type. Body and bonnet are made of high grade semi-steel. Seat rings are bronze and gate or wedge cast iron, faced with bronze rings firmly secured to wedge, except in the sizes up to 3 inches in which wedge is made entirely of bronze.

Valve can be packed under pressure when wide open.

Size Inches	Screwed: No. 325 Each	Screwed: End to End Inches	Flanged: No. 326 Each	Flanged: Face to Face Inches	Flanged: Diam. Flange Inches
2	$10.00	5 7/16	$12.00	7	6
2½	11.50	5⅞	13.50	7½	7
3	14.00	6⅜	16.50	8	7½
3½	17.00	7	19.50	8½	8½
4	19.00	7½	23.00	9	9
5	27.50	8⅛	31.50	10	10
6	32.50	8½	36.50	10½	11
8	54.00	10¼	58.00	11½	13½
10	90.00	11⅜	95.00	13	16
12	125.00	12¾	133.00	14	19
14	.....	....	181.00	15	21
16	.....	....	260.00	16	23½
18	.....	....	350.00	17	25
20	.....	....	425.00	18	27½
24	.....	....	600.00	20	32

Jenkins Iron Body Gate Valves

Inside Screw—Double Disc Parallel Seat—Bronze Mounted

No. 873, Flanged

For 200 Pounds Non-Shock Cold Oil, Water, Gas Pressure
400 Pounds Hydrostatic Test

Wedge consists of 2 discs and 2 spreaders. The discs in sizes up to 5 inches are of cast bronze, in larger sizes of cast iron into which bronze face rings are rolled.

Crowned bearing surfaces on the inside face of each disc, located as far apart as possible, prevent springing of discs when spreaders exert their outward forces.

Spreaders are entirely independent of discs and operate between them.

Size Inches	Screwed: No. 872 Each	Screwed: End to End Inches	Flanged: No. 873 Each	Flanged: Face to Face Inches	Flanged: Diameter Flange Inches
2	$19.00	5½	$20.00	7	6
2½	24.00	6¼	25.00	7½	7
3	28.50	7	30.00	8	7½
3½	32.50	7¼	34.00	8½	8½
4	36.00	7½	38.00	9	9
5	48.50	8¾	51.00	10	10
6	57.00	11¼	60.00	10½	11
8	90.00	12⅝	90.00	11½	13½
10	128.00	13⅝	128.00	13	16
12	170.00	13¾	170.00	14	19
14	.....	....	238.00	15	21
16	.....	....	332.00	16	23½
18	.....	....	442.00	17	25
20	.....	....	544.00	18	27½
24	.....	....	850.00	20	32

Jenkins Iron Body Gate Valves

Bronze Mounted—Outside Screw and Yoke Rising Spindle—Solid Wedge

Pressures:
1½ to 12-Inch: 125 Pounds Steam at 450°F.
200 Pounds Non-Shock Cold Oil, Water, or Gas
14 and 16-Inch: 125 Pounds Steam at 450°F.
150 Pounds Non-Shock Cold Oil, Water, or Gas
18 to 24-Inch: Steel Valves Recommended for Steam Service
150 Pounds Non-Shock Cold Oil, Water, or Gas

These valves are made of high grade cast iron; double face solid wedge type, bronze spindle and renewable bronze seat rings. Wedges up to and including 3 inches are cast of solid bronze; 3½ inches and larger are cast iron with bronze faces rolled in. Wedge has guide which is fitted to slide true and easy on ribs in body and thus prevent wedge face from chattering when partly open, or from touching seat except at point of final closing.

Valve can be packed under pressure when wide open.

No. 651 B.S., Flanged

Size Inches	No. 650, B.S. Screwed: Each	No. 650, B.S. Screwed: End to End Inches	No. 651 B.S. Flanged: Each	No. 651 B.S. Flanged: Face to Face Inches	No. 651 B.S. Flanged: Diam. Flg. Inches
1½	$19.00	4¾	.....	....	....
2	19.00	5 7/16	$21.00	7	6
2½	20.50	5⅞	22.50	7½	7
3	23.50	6⅜	26.00	8	7½
3½	27.00	7	29.50	8½	8½
4	32.50	7½	36.50	9	9
5	45.00	8⅛	49.00	10	10
6	52.00	8½	56.00	10½	11
8	86.00	10¼	90.00	11½	13½
10	131.00	11⅜	136.00	13	16
12	172.00	12¾	180.00	14	19
14	.....	....	255.00	15	21
16	.....	....	350.00	16	23½
18	.....	....	470.00	17	25
20	.....	....	565.00	18	27½
24	.....	....	775.00	20	32

Jenkins Iron Body Gate Valves

Double Disc—Parallel Seat—Outside Screw and Yoke Rising Spindle

200 Pounds Non-Shock Cold Oil, Water, Gas Pressure
400 Pounds Hydrostatic Test

No. 875, Flanged

Consists of two discs and two spreaders. The discs in sizes up to 5 inches are of cast bronze, in larger sizes of cast iron into which bronze face rings are rolled.

Crowned bearing surfaces on the inside face of each disc, located as far apart as possible, prevent springing of discs when spreaders exert their outward forces.

Spreaders are entirely independent of discs and operate between them.

The seats and disc faces are first machined and then lapped, assuring tightness.

Size Inches	No. 874 Screwed: Each	No. 874 Screwed: Face to End Inches	No. 875 Flanged: Each	No. 875 Flanged: Face to Face Inches	No. 875 Flanged: Diameter Flange Inches
2	$25.00	5½	$26.00	7	6
2½	31.50	6¼	32.50	7½	7
3	36.00	7	37.50	8	7½
3½	41.00	7¼	42.50	8½	8½
4	45.50	7½	47.50	9	9
5	61.50	8¾	64.00	10	10
6	72.00	11¼	75.00	10½	11
8	112.00	12⅝	112.00	11½	13½
10	160.00	13⅝	160.00	13	16
12	212.00	13¾	212.00	14	19

Jenkins Iron Body Gate Valves

Solid Wedge

Bronze Mounted—Inside Screw—Non-Rising Spindle

250 Pounds Steam Pressure at 450°F.
500 Pounds Non-Shock Cold Oil, Water, Gas Pressure

No. 203, Flanged

Suitable for steam and water service of all kinds under heavy pressures, and is especially adapted to meet the requirements of modern high pressure power plants.

Body is tapped and faced for seats at exactly the same angle as the faces of the wedge. Seat rings are made of hard bronze and screwed to shoulders which make perfect joints.

Wedge is tapered equally on both faces for tight closure; cast bronze up to 3-inch size, cast iron with bronze face in the larger sizes.

Pressure-containing parts are semi-steel, with a tensile strength of 34,000 pounds.

	No. 203A, Screwed		No. 203, Flanged		
Size Inches	Each	End to End Inches	Each	Face to Face Inches	Diam. Flange Inches
2	$27.50	7	$30.00	8½	6½
2½	33.00	8	35.50	9½	7½
3	45.00	9	48.00	11⅛	8¼
3½	57.00	10	60.00	11⅞	9
4	60.00	11	65.00	12	10
5	85.00	13½	90.00	15	11
6	100.00	15⅞	107.00	15⅞	12½
8	155.00	16½	162.00	16½	15
10	250.00	18	258.00	18	17½
12	.....	....	335.00	19¾	20½

Jenkins Iron Body Gate Valves

Bronze Mounted, Outside Screw and Yoke, Rising Spindle, Solid Wedge

For 250 Pounds Steam Working Pressure at 450°F.
500 Pounds Non-Shock Cold Oil, Water and Gas

No. 204, Flanged

These valves are of the double face, solid wedge type. The renewable seat rings and wedge face rings (entire wedge of smaller sizes) are made of hard bronze for high temperature service. Guides cast in the body prevent chattering when the valve is partially open. When fully open, the wedge is entirely removed from the line of flow.

The rising spindle of this type of valve serves as an indicator and the outside threads can be easily cleaned. Flanged valves have bosses on body which can be tapped for piped-on bypasses. Flanges conform to American Extra Heavy dimensions and have 1/16-inch raised face.

Unless otherwise specified, flanged valves are furnished faced and drilled.

	No. 204A, Screwed			No. 204, Flanged			
Size Inches	With Bronze Spindle Each	With Steel Spindle Each	End to End In.	With Bronze Spindle Each	With Steel Spindle Each	Face to Face In.	Diam. Flg. In.
2	$38.50	$35.50	7	$41.00	$38.00	8½	6½
2½	44.50	41.00	8	47.00	43.50	9½	7½
3	58.00	54.00	9	61.00	57.00	11⅛	8¼
3½	72.00	67.00	10	75.00	70.00	11⅞	9
4	78.00	72.00	11	83.00	77.00	12	10
5	108.00	100.00	13½	113.00	105.00	15	11
6	124.00	115.00	15⅞	131.00	122.00	15⅞	12½
8	194.00	180.00	16½	201.00	187.00	16½	15
10	297.00	275.00	18	305.00	283.00	18	17½
12	.....	.....	....	420.00	390.00	19¾	20½

Jenkins Iron Body Underwriters' Gate Valves

Solid Wedge

Sizes 2½ to 12 Inches
175 Pounds Non-Shock Cold Water Pressure

Size 14-Inch
150 Pounds Non-Shock Cold Water Pressure

No. 821

No. 824

No. 825

Approved by the National Board of Fire Underwriters and Associated Factory Mutual Fire Insurance Companies.

In compliance with the Underwriters' specifications, this valve has bronze-bushed stuffing box, bronze stuffing box nuts, bronze glands, bronze spindle and renewable bronze seat rings.

This valve is of the double face, solid wedge type. Guides cast in body prevent chattering when the valve is partially open and keep wedge from touching seats until at point of final closing. When fully open, the wedge is entirely removed from the line of flow.

By-passes and clean-out pockets can be supplied on request.

Valve with inside screw has an upper flange on bonnet to which the indicator post flange is bolted.

Each valve is individually tested at the factory under hydrostatic pressure in excess of its basic rating.

Inside Screw—Stationary Spindle

	No. 820 Screwed		No. 821 Flanged			No. 822 Hub Ends		
Size Inches	Each	End to End Inches	Each	Face to Face Inches	Diam. Flanges Inches	Each	Face to Face Inches	I.D. Hub Inches
4	$19.00	7½	$23.00	9	9	$19.00	12½	5 7/10
6	32.50	8½	36.50	10½	11	32.50	13½	7 8/10
8	54.00	10¼	58.00	11½	13½	54.00	14½	10
10	90.00	11⅜	95.00	13	16	90.00	15	12 1/10
12	125.00	12¾	133.00	14	19	125.00	15½	14 2/10
14	.....	....	181.00	15	21	173.00	16½	16 9/20

Outside Screw and Yoke—Rising Spindle

	No. 824 Screwed		No. 825 Flanged		
Size Inches	Each	End to End Inches	Each	Face to Face Inches	Diam. Flanges Inches
2½	$20.50	5⅞	$22.50	7½	7
3	23.50	6⅜	26.00	8	7½
3½	27.00	7	29.50	8½	8½
4	32.50	7½	36.50	9	9
5	45.00	8⅛	49.00	10	10
6	52.00	8½	56.00	10½	11
8	86.00	10¼	90.00	11½	13½
10	131.00	11⅜	136.00	13	16
12	172.00	12¾	180.00	14	19
14	.....	....	255.00	15	21

No. 883 Jenkins Iron Body Gate Valves

Double Disc—Parallel Seat—Non-Rising Spindle
Hub Ends

Sizes 2 to 12 In.: 175 Lb. Non-Shock Cold Water Pressure; 350 Lb. Hydrostatic Test
Sizes 14 to 24 In.: 150 Lb. Non-Shock Cold Water Pressure; 300 Lb. Hydrostatic Test

Conforms to specifications of American Water Works Association.

Fits Classes A, B, C and D bell ends.

No. 883

Size Inches	Each	End to End Inches	I.D. of Hub Inches
2	....	8½	3.25
2½	....	8¾	3.75
3	....	9½	4.75
4	....	12½	5.70
5	....	13	6.75
6	....	13¼	7.80
8	....	14	10.00
10	....	15	12.10
12	....	15¾	14.20
14	....	16½	16.45

Can be furnished in sizes to 48 inches. Prices on application.

Regularly furnished in styles that open by turning to the left. Can be furnished in styles that open by turning to the right when so specified.

High Pressure Fittings

PIPE FITTINGS for *high pressures* and *high temperatures* can be furnished. Tell us your needs. Prices and complete information will be sent to you promptly.

Jenkins Stainless Steel Valves

Corrosion-Resisting

These valves have wide application in all process industries including food products, dyeing, bleaching, canning, packing, chemical, rayon, oil, paper and pulp mills, creameries, restaurants, hotels, bottling apparatus, mining, motion pictures, soap manufacturing, textiles, explosives and other places where resistance to corrosion and freedom from contamination are demanded.

By stainless steel corrosion-resisting is generally meant some combination of chromium and nickel with small additions of silicon, molybdenum, copper, columbium, titanium, etc., the balance being iron.

The expression, 18-8, refers to an 18 per cent chromium and 8 per cent nickel content.

The most generally used stainless is this 18-8, but it often is described by a trade name such as Allegheny metal, Enduro, Nirosta, KA2S, etc.

Jenkins cast stainless steel valves are regularly made of 18-8S and 18-8SMO, each having a maximum carbon content of .07 per cent. As carbon content is the critical element for severe corrosive resistance, it is important that this be limited to a minimum. Both alloys are highly resistant to corrosion, but 18-8SMO is used under most severe conditions and is particularly adapted to sulphite pulp mills.

It is safe to state that these two alloys will suffice in almost ninety per cent of all corrosion-resisting requirements.

When ordering, specify whether alloy 18-8S or 18-8SMO is desired.

Jenkins Stainless Steel Regrinding Globe and Angle Valves

Regrinding Bevel Disc—Union Bonnet
Screwed: 200 Pounds Non-Shock Liquid or Gas Pressure
Flanged: 150 Pounds Non-Shock Liquid or Gas Pressure

No. 1308, Globe, Screwed

Size In.	Screwed: No. 1308 Globe End to End, In.	Screwed: No. 1310 Angle Ctr. to End, In.	Flanged: No. 1309 Globe Face to Face, In.	Flanged: No. 1311 Angle Ctr. to Face, In.	Flanged: Diam. Flge. In.
¼	2 7/16	1 3/16	...	...	...
⅜	2 7/16	1 3/16	...	...	...
½	2 7/16	1 3/16	3 7/16	2¼	3½
¾	3 21/32	1 9/16	3⅞	2 7/16	3⅞
1	3½	1¾	4⅜	2 11/16	4¼
1¼	4 1/16	2	4⅞	2⅞	4⅝
1½	4 19/32	2 5/16	5½	3 3/16	5
2	5 9/16	2¾	6½	3¾	6
2½	6 7/16	3¼	7½	4 5/16	7
3	7½	3¾	8⅞	4⅝	7½

Prices upon application.

Jenkins Stainless Steel Gate Valves

Solid Wedge—Inside Screw—Non-Rising Spindle

Screwed: 200 Pounds Non-Shock Liquid or Gas Pressure
Flanged: 150 Pounds Non-Shock Liquid or Gas Pressure

No. 1300, Screwed

Size In.	No. 1300 Screwed End to End, In.	No. 1301, Flanged: Face to Face In.	No. 1301, Flanged: Diam. Flg. In.
¼	2⅛	...	...
⅜	2⅛	...	...
½	2⅛	2 15/16	3½
¾	2½	3⅜	3⅞
1	2⅞	3 15/16	4¼
1¼	3¼	4½	4⅝
1½	3⅝	4⅞	5
2	4¼	5¾	6
2½	4⅞	6½	7
3	5 9/16	7⅜	7½

Prices upon application.

Jenkins Stainless Steel Gate Valves

Double Disc—Taper Seat—Outside Screw and Yoke—Rising Spindle

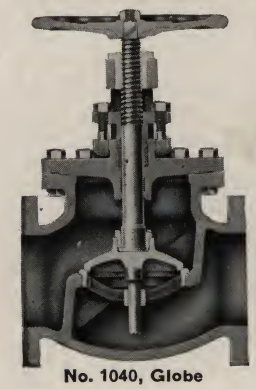
Screwed: 200 Pounds Non-Shock Liquid or Gas Pressure
Flanged: 150 Pounds Non-Shock Liquid or Gas Pressure

No. 1302, Screwed

Size In.	No. 1302 Screwed End to End, In.	No. 1303, Flanged: Face to Face In.	No. 1303, Flanged: Diam. Flg. In.
½	2¼	3¼	3½
¾	2⅝	3 5/16	3⅞
1	3	3⅝	4¼
1¼	3 7/16	4¼	4⅝
1½	3¾	4¾	5
2	4	5¾	6
2½	4½	5⅞	7
3	5	6¾	7½

Prices upon application.

Series 150 Jenkins Cast Steel Globe and Angle Valves



No. 1040, Globe

Regrind-Renew Type—Outside Screw and Yoke with Rising Spindle—Bolted Bonnet

Flanged Ends
150 Lb. Steam, Water Pressure at 500°F.
100 Lb. Oil Pressure at 750°F.
350 Lb. Hydrostatic Shell Test

Size In.	No. 1040 Globe F. to F. In.	No. 1041 Angle C. to F. In.	Flge. Diam. In.	Flge. Thick. In.
2	8	4	6	⅝
2½	8½	4¼	7	11/16
3	9½	4¾	7½	¾
3½	10½	...	8½	13/16
4	11½	5¾	9	15/16
5	14	...	10	15/16
6	16	8	11	1

Series 15 Jenkins Cast Steel Gate Valves

Renewable Seat Ring

For 150 Pounds Steam Working Pressure and Total Temperatures of 500°F.

For 300 Pounds Non-Shock Oil, Water, Gas Working Pressure at Normal Temperature of 100°F.

For Steam and Hot Oil at 100 Pounds and Maximum Temperatures of 750°F.

Especially recommended for severe services in steam and chemical plants, oil refineries and other industries where corrosion and erosion are encountered, and hazardous liquids and gases are conducted.

Can be fitted with any combination of metal alloys to meet the requirements of particular installations.

No. 1009, Flanged

The bodies and bonnets are cast carbon steel. Castings are heat treated and possess an average tensile strength of 70,000 pounds.

Can be furnished with body and bonnet of cast chrome molybdenum steel.

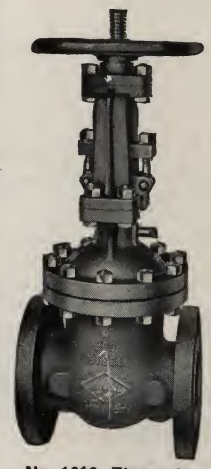
Size In.	No. 1007, Screwed Each	No. 1007, Screwed End to End In.	No. 1009, Flanged Each	No. 1009, Flanged Face to Face In.	No. 1009, Flanged Diam. Flg. In.
2	....	...	....	7	6
2½	....	...	....	7½	7
3	....	...	....	8	7½
4	....	...	....	9	9
5	....	...	....	10	10
6	....	...	....	10½	11
8	....	...	....	11½	13½
10	....	...	....	13	16
12	....	...	....	14	19

Series 30 Jenkins Cast Steel Gate Valves

Renewable Seat Ring

For 300 Pounds Steam and Hot Oil Working Pressure at Maximum Temperature of 750°F.

For 500 Pounds Non-Shock Oil, Water, Gas Working Pressure at Normal Temperature of 100°F.



No. 1010, Flanged

Especially recommended for severe services in steam and chemical plants, oil refineries and other industries where corrosion and erosion are encountered, and hazardous liquids and gases are conducted.

Can be fitted with any combination of metal alloys to meet their requirements of particular installations.

Bosses cast on body can be tapped for drain connections or by-passes.

Bodies and bonnets are cast carbon steel produced in electric furnaces. Castings are heat treated and possess an average tensile strength of 70,000 pounds.

Spindles are stainless steel but can be furnished of rolled bronze, rolled monel, cold rolled steel or rolled stainless steel as specified.

When specially ordered, can be furnished with body and bonnet cast of chrome molybdenum steel.

Size In.	No. 1008, Screwed Each	No. 1008, Screwed End to End In.	No. 1010, Flanged Each	No. 1010, Flanged Face to Face In.	No. 1010, Flanged Diam. Flange In.
2	....	..	....	8½	6½
2½	....	..	....	9½	7½
3	....	..	....	11⅛	8¼
4	....	..	....	12	10
5	....	..	....	15	11
6	....	..	....	15⅞	12½
8	....	..	....	16½	15
10	....	..	....	18	17½
12	....	..	....	19¾	20½

Jenkins Renewable Composition Discs

Square Hole

These recommendations apply only when the disc is to be fitted in a Jenkins Disc Holder or in an adaptation of this holder in which composition discs can be used.

Round Hole

Saturated Steam Service

Screw-Operated Valves (Globe, Angle, Cross and Y) Pressure Range Pounds	Maximum Temperature	Disc No.	Pressure-Operated Valves (Check and Self-Closing) Pressure Range Pounds	Maximum Temperature	Disc No.
0–25	267° F.	110-H	0–25	267° F.	110-H
25–150	366° F.	119-A	25–75	320° F.	80-A
150–250	406° F.	1120 to 3″	75–150	366° F.	119-A
			150–250	406° F.	Metal
Hot Water Service					
0–50	200° F.	110-H	0–50	200° F.	294
0–300	250° F.	80-A	50–300	250° F.	110-H
300–1000	300° F.	119-A	15–100	300° F.	80-A
.....	.....	.....	100–500	300° F.	119-A
Cold Water Service					
0–300	115° F.	294	0–50	115° F.	24
300–1000	115° F.	110-H	50–600	115° F.	294
.....	.....	.....	600–1000	115° F.	110-H
Air and Gas Service					
Vac.-300	Normal	936	Vac.-25	Normal	36
300–600	Normal	110-H	25–150	Normal	946
Vac.-300	200° F.	299	150–300	Normal	936
.....	.....	.....	300–600	Normal	1106
Oil Service					
0–150	125° F.	299	0–100	125° F.	936-A
0–250	250° F.	119-A	0–100	200° F.	299
0–600	300° F.	1120 to 3″	50–250	250° F.	119-A
			.....	.....	.....
Gasoline Service					
0–300	Normal	808	0–75	Normal	936-A
.....	.....	.....	75–300	Normal	808

Acids, Alkalies, Industrial Solvents, Alcoholic Beverages, Liquid Foodstuffs and Other Services

Specific disc recommendations will be made on receipt of detailed service information.

List Prices

Valve Size In.	Reg. Comp. Each	No. 1120 Each	Nos. 299, 936A Each	Valve Size In.	Reg. Comp. Each	No. 1120 Each	Nos. 299, 936A Each	Valve Size In.	Reg. Comp. Each
¼	$.06	$.25	$.15	2½	$.48	$1.70	$1.15	12	$5.00
⅜	.08	.35	.20	3	.80	2.65	1.90	14	7.00
½	.08	.35	.20	3½	1.00	....	....	16	8.00
¾	.10	.40	.25	4	1.20	....	....	18	10.00
1	.12	.50	.30	5	1.60	....	....	20	12.00
1¼	.18	.70	.45	6	2.00	....	....	22	15.00
1½	.24	.85	.60	8	2.80	....	....	24	18.00
2	.36	1.30	.85	10	4.50	....	....	..	.....

Jenkins Renewable Metal Discs

For certain service conditions where metal discs are preferable to resilient compounds. Others can be supplied on receipt of information regarding requirements.

No. 269 Steam Metal Disc. Made of bronze for saturated steam at pressures up to 300 pounds per square inch and maximum temperature of 500° F.

No. 648 White Metal Disc. Made of white metal alloy for air, gas, oil, water, gasoline and kerosene at pressures up to 150 pounds.

No. 649 Nickel Alloy Disc. Recommended for superheated steam at pressures up to 300 pounds per square inch and maximum temperature of 700° F. Prices on request.

List Prices

Valve Size In.	No. 269 Each	No. 648 Each	Valve Size In.	No. 269 Each	No. 648 Each	Valve Size In.	No. 269 Each	No. 648 Each
¼	$.30	$.15	1½	$.65	$1.00	5	$7.20	$7.40
⅜	.30	.20	2	1.00	1.25	6	8.00	8.75
½	.35	.20	2½	1.90	1.70	8	12.50	12.00
¾	.40	.35	3	2.70	2.40	10	17.50	16.00
1	.50	.55	3½	4.20	3.75	12	22.80	21.00
1¼	.55	.80	4	5.00	5.00	14	30.60	.....

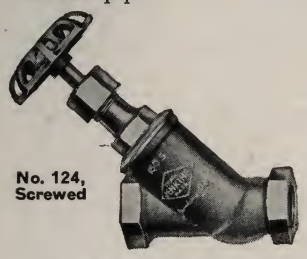
Inquiries for disc recommendations to meet special service requirements should include detailed information regarding liquids or gases to be controlled, maximum pressures and temperatures, type and number of valve in which disc is to be fitted, and other facts about any unusual conditions to be encountered or overcome.

Jenkins Bronze Y or Blow-Off Valves

Renewable Seat Ring—Composition Disc

Screwed: 150 Pounds Steam
300 Pounds Non-Shock Cold Oil, Water, Gas
Flanged: 150 Pounds Steam
225 Pounds Non-Shock Cold Oil, Water, Gas

Suited for blow-off services or where heavy fluids are handled. Because of angle, seat opening is practically in line with pipe.



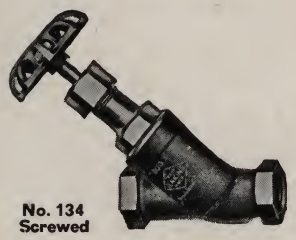
No. 124, Screwed

Size In.	No. 124, Screwed Each	E.toE., In.	No. 125, Flanged Each	F.toF., In.
3/8	$5.80	2 3/8	.....	....
1/2	6.40	3 1/16	$15.00	4 1/4
3/4	8.50	4 3/8	21.00	5 1/2
1	11.00	5 1/4	27.00	6 1/4
1 1/4	14.00	5 15/16	33.00	7
1 1/2	18.00	6 5/8	40.00	7 5/8
2	26.00	8 1/8	60.00	9 1/4
2 1/2	49.00	9 1/2	83.00	10 5/8
3	63.00	9 3/4	110.00	11

Jenkins Bronze Y or Blow-Off Valves

Renewable Bronze Seat Ring and Composition Disc

Pressure: Screwed
300 Pounds Steam
600 Pounds Non-Shock Cold Oil, Water, Gas
Pressure: Flanged
300 Pounds Steam
500 Pounds Non-Shock Cold Oil, Water, Gas
A.S.M.E. Boiler Code—200 Pounds Steam Pressure at 388°F.



No. 134 Screwed

Size In.	Screwed No. 134 Each	E. to E. In.	Flanged No. 135 Each	F. to F. In.
1/2	$22.00	3 1/2	$30.00	4 5/8
3/4	30.00	4 5/8	38.00	6
1	38.00	5 9/16	52.00	7
1 1/4	49.00	6 3/16	67.00	7 3/4
1 1/2	60.00	6 7/8	85.00	8 5/8
2	91.00	8 3/8	132.00	10
2 1/2	170.00	9 7/8	237.00	11 3/4
3	220.00	10 5/8	285.00	11 3/4

Jenkins Iron Body Y or Blow-Off Valves

Outside Screw and Yoke—Bronze Mounted
Renewable Bronze Seat Ring—Composition Disc

150 Pounds Steam Working Pressure
250 Pounds Non-Shock Oil, Cold Water or Gas Working Pressure

No. 296, Screwed

Size In.	No. 296, Screwed Each	End to End In.
2	$16.00	8
2 1/2	22.00	9 1/2
3	29.00	11 1/2

Size In.	No. 297, Flanged Each	Face to Face In.	Diam. Flge. In.
2	$19.00	9 13/16	6
2 1/2	27.00	11	7
3	34.00	12 1/8	7 1/2

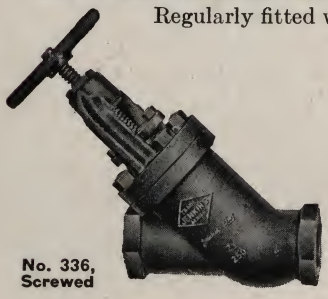
Prices and dimensions of larger sizes on request.

Jenkins Iron Body Y or Blow-Off Valves

Outside Screw and Yoke
Renewable Bronze Seat Ring—Composition Disc

250 Pounds Steam Pressure
500 Pounds Non-Shock Cold Oil, Water, Gas Pressure
A.S.M.E. Boiler Code—200 Pounds Steam Pressure at 388°F.

Regularly fitted with No. 119-A disc.



No. 336, Screwed

Size In.	No. 336, Screwed Each	End to End In.
2	$30.00	9
2 1/2	38.00	10 9/16
3	49.00	12

Size In.	No. 337, Flanged Each	Face to Face In.	Diam. Flge. In.
2	$34.00	11 1/4	6 1/2
2 1/2	45.00	13	7 1/2
3	60.00	14	8 1/4

No. 121 Jenkins Bronze Whistle Valves

300 Lb. Non-Shock Air or Gas Pressure

Quick-acting spring and lever operated valve for operating steam whistles in factories, on steamboats and in other places where quick on and off operation of air or gas applications is essential.

Contains a Jenkins renewable composition disc. Valve is bronze, with malleable iron lever.

Size, In.	Each
1/4	$6.00
3/8	7.00
1/2	8.00
3/4	10.00
1	13.00
1 1/4	16.00
1 1/2	24.00
2	34.00
2 1/2	50.00
3	90.00

Jenkins Hy-Lo Air Guns

With Special No. 946 Disc

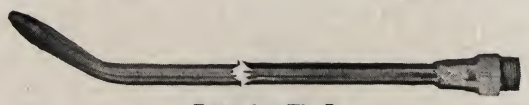
For 150 Pounds Air Pressure

No. 610, with Lever Handle

No. 609, with Push Button

Flat Tip B

Pointed Tip C



Extension Tip D

For use on compressed air lines for blowing dust, dirt, chips, lint, filings, sand, borings and other matter. It prevents air waste and saves air at the point of use. Permits extremely close regulation of flow.

Each gun is cast of high grade bronze and is carefully machined, assembled, inspected and tested. Regularly fitted with a rounded tip, these guns can be furnished with flat, pointed or extension tip as may be required. Overall length of extension tip D, 9 1/2 inches.

The lever of No. 610 is malleable iron, enameled green, and shaped to fit the palm of the hand for easy operation.

Fitted with specially compounded disc, which assures perfect tightness.

Size Inches	Nos. 609 and 610 with Rounded Tip Each	Nos. 610B, and 609B, with Flat Tip B Each	Nos. 610C and 609C, with Pointed Tip C Each	Nos. 610D and 609D, with Extension Tip D Each	Approx. Weight Ounces
1/8	$3.20	$4.20	$3.20	$4.70	8
1/4	3.20	4.20	3.20	4.70	8
3/8	3.70	4.70	3.70	5.20	9

Hose Nipples

Size ..... inches	1/8	1/4	3/8
1/8-Inch Hose ..... each	$.90	$.90	$1.00
1/4-Inch Hose ..... each	.90	.90	1.00
3/8-Inch Hose ..... each	1.00	1.00	1.20
1/2-Inch Hose ..... each	1.20	1.20	1.30
3/4-Inch Hose ..... each	1.40	1.40	1.50

LUNKENHEIMER 125 lb. S.P. VALVES

SMALL VALVES, SCREW OR FLANGE ENDS, BRONZE

(125 lb. S.P.) (200 lb. W.O.G.)

Section

Fig. 2125

Exterior

Fig. 2125—Screw Ends
¼ to 3 inches
Fig. 2126—Flange Ends
¾ to 3 inches
125 lb. S.P., 200 lb. W.O.G.
Bronze—Gate
Double Wedge Disc, Taper Seat
Rising Bronze Stem

Section

Fig. 2129

Exterior

Fig. 2129—Screw Ends
¼ to 3 inches
Fig. 2130—Flange Ends
¾ to 3 inches
125 lb. S.P., 200 lb. W.O.G.
Bronze—Gate
Single Wedge Disc, Taper Seat
Non-Rising Bronze Stem

LARGE VALVES, SCREW ENDS, IRON BODY BRONZE MOUNTED

125 lb. S.P.—All sizes
200 lb. W.O.G.—5 in. and smaller

(125 lb. S.P.)—(200 lb. W.O.G.) All sizes

Fig. 1120—Globe
Fig. 1121—Angle
Renewable Bronze Seat and Disc
2 to 6 inches

Fig. 1789—Swing Check
Renewable Bronze Seat and Disc
2 to 6 inches
Renewable Side Plugs

Fig. 1427—Gate
Inside Screw
Non-Rising Bronze Stem
Renewable Bronze Seats and Disc
2 to 6 inches

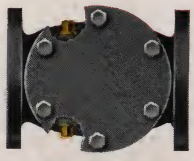
Fig. 1429—Gate
Outside Screw and Yoke
Rising Bronze Stem
Renewable Bronze Seats and Disc
2 to 6 inches

LARGE VALVES, FLANGE ENDS, IRON BODY BRONZE MOUNTED

(125 lb. S.P.)—(200 lb. W.O.G.) 12 in. and smaller
(80 lb. S.P.)—(150 lb. W.O.G.) 14 in. and larger

125 lb. S.P.—All sizes
200 lb. W.O.G.—5 in. and smaller

Fig. 1123—Globe
Fig. 1124—Angle
Renewable Bronze Seat
and Disc
2 to 14 inches



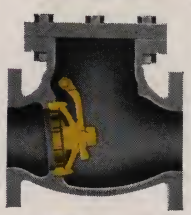


Fig. 1790—Swing Check
Renewable Bronze Seat
and Disc. 2 to 12 inches
Renewable Side Plugs

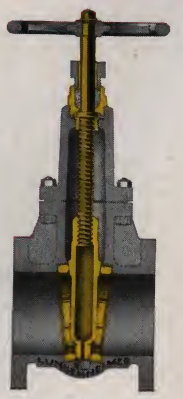


Fig. 1428—Gate
Inside Screw
Non-Rising Bronze Stem
Renewable Bronze Seats
and Disc. 2 to 12 inches

Fig. 1430—Gate
Outside Screw and Yoke
Rising Bronze Stem
Renewable Bronze Seats
and Disc. 2 to 24 inches

Refer to Index for other pages which give prices and detailed information on above illustrations.

LUNKENHEIMER 150 and 200 lb. S.P. VALVES

SMALL VALVES, SCREW OR FLANGE ENDS

150 lb. S.P. (W.O.G. Ratings Under Illustrations)

Fig. 123—Globe } Screw
Fig. 214—Angle } Ends
⅛ to 3 inches
150 lb. S.P.
300 lb. W.O.G.

Fig. 124—Globe } Flange
Fig. 215—Angle } Ends
¾ to 3 inches
150 lb. S.P.
225 lb. W.O.G.

Bronze "N-M-D"
(Non-Metallic Disc)

Fig. 231—Horiz. } Screw
Fig. 272—Angle } Ends
⅛ to 2 inches
150 lb. S.P.
300 lb. W.O.G.

Fig. 232—Horiz. } Flange
Fig. 273—Angle } Ends
¾ to 2 inches
150 lb. S.P.
225 lb. W.O.G.

Bronze "N-M-D"
Lift Check
(Non-Metallic Disc)

Fig. 427—Screw Ends
¼ to 3 inches
150 lb. S.P.
300 lb. W.O.G.

Fig. 617—Flange Ends
½ to 3 inches
150 lb. S.P.
225 lb. W.O.G.

Bronze—Gate
Double Wedge Disc
Taper Seat
Rising Bronze Stem

Fig. 1021—Globe
Fig. 1022—Angle
"Ferrenewo"
Renewable "NT4" Nickel Alloy Seat and Disc
150 lb. S.P.
225 lb. W.O.G.
Union Bonnet
¼ to 2 inches
Outside Screw and Yoke
2½ to 4 inches

Fig. 1021-P—Globe
Fig. 1022-P—Angle
"Ferrenewo"
Plug Type
Renewable "NS5" Nickel Alloy Seat and Disc
150 lb. S.P.
225 lb. W.O.G.
Union Bonnet
¼ to 2 inches

Orders should specify service—steam, hot water, cold water, gas, air, gasoline, oil, butane, propane.

Fig. 1640—Screw Ends
¼ to 4 inches
Gate "King-clip"
Inside Screw
Rising Bronze Stem
¼ to 2 in. { 150 lb. S.P. / 225 lb. W.O.G.
2½ to 4 in. { 125 lb. S.P. / 175 lb. W.O.G.

Fig. 1641—Flange Ends
1 to 4 inches
Gate "King-clip"
Inside Screw
Rising Bronze Stem
125 lb. S.P.
175 lb. W.O.G.

Fig. 1681—Screw Ends
½ to 4 inches
Gate "King-clip"
Outside Screw and Yoke
Rising Bronze Stem
½ to 2 in. { 150 lb. S.P. / 225 lb. W.O.G.
2½ to 4 in. { 125 lb. S.P. / 175 lb. W.O.G.

Fig. 1682—Flange Ends
1 to 4 inches
Gate "King-clip"
Outside Screw and Yoke
Rising Bronze Stem
125 lb. S.P.
175 lb. W.O.G.

(200 lb. S.P. 500° F.) (400 lb. W.O.G.)

Fig. 73—Globe } Screw
Fig. 72—Angle } Ends
¼ to 3 inches
***Fig. 70—Globe** } Flange
***Fig. 69—Angle** } Ends
½ to 3 inches
Bronze—"Renewo"
Renewable "NT4" Nickel Alloy Seat and Disc

Fig. 73-P—Globe } Screw
Fig. 72-P—Angle } Ends
¼ to 3 inches
Bronze—"Renewo"
Plug Type
Renewable "NS5" Nickel Alloy Seat and Disc

Fig. 407—Globe } Screw
Fig. 408—Angle } Ends
⅛ to 3 inches
***Fig. 580—Globe** } Flange
***Fig. 581—Angle** } Ends
½ to 3 inches
Bronze—Regrinding
Renewable Bronze Disc

Fig. 414—Horiz. } Screw
Fig. 415—Angle } Ends
⅛ to 3 inches
***Fig. 583—Horiz.** } Flange
***Fig. 584—Angle** } Ends
½ to 3 inches
Bronze—Regrinding
Lift Check
Renewable Bronze Disc

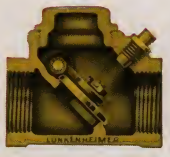


Fig. 554—Screw Ends
¼ to 3 inches
***Fig. 596**—Flange Ends
½ to 3 inches
Bronze—Regrinding
Swing Check
Renewable Bronze Disc and Side Plugs

Fig. 768—Screw Ends
¼ to 3 inches
***Fig. 769**—Flange Ends
¾ to 3 inches
Bronze—Gate
Single Wedge Disc
Taper Seat
Inside Screw
Non-Rising Stem
Renewable "NT4" Seats and Disc, 1 inch and larger

*150 lb. S.P. 500° F. 225 lb. W.O.G.

Refer to Index for other pages which give prices and detailed information on above illustrations.

LUNKENHEIMER 250 and 300 lb. S.P. VALVES

SMALL VALVES, SCREW OR FLANGE ENDS, BRONZE

(300 lb. S.P. 550° F.) (600 lb. W.O.G.)

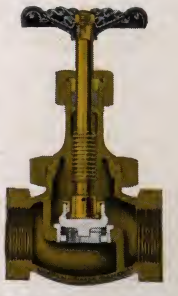


Fig. 16—Globe } Screw
Fig. 17—Angle } Ends
¼ to 3 inches
***Fig. 19—Globe } Flange**
***Fig. 20—Angle } Ends**
½ to 3 inches
Bronze "Renewo"
Renewable "NT4" Nickel Alloy Seat and Disc
*500 lb. W.O.G.

Fig. 16-P—Globe } Screw
Fig. 17-P—Angle } Ends
¼ to 3 inches
Bronze—"Renewo" Plug Type
Renewable "NS5" Nickel Alloy Seat and Disc

Fig. 409—Globe } Screw
Fig. 557—Angle } Ends
¼ to 3 inches
***Fig. 410—Globe } Flange**
***Fig. 411—Angle } Ends**
½ to 3 inches
Bronze—Regrinding
Renewable Bronze Disc

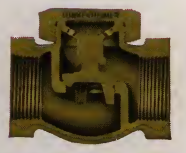


Fig. 413—Horiz. } Screw
Fig. 621—Angle } Ends
¼ to 3 inches
***Fig. 558—Horiz. } Flange**
***Fig. 587—Angle } Ends**
½ to 3 inches
Bronze—Regrinding Lift Check
Renewable Bronze Disc

Fig. 624—Screw Ends
¼ to 3 inches
***Fig. 625**—Flange Ends
½ to 3 inches
Bronze—Regrinding Swing Check
Renewable Bronze Disc and Side Plugs

Fig. 771—Screw Ends
¼ to 3 inches
***Fig. 772**—Flange Ends
¾ to 3 inches
Bronze Gate Single Wedge Disc Taper Seat
Inside Screw
Non-Rising Stem
Renewable "NT4" Seats and Disc. 1 inch and larger

LARGE VALVES, SCREW ENDS, IRON BODY BRONZE MOUNTED

(250 lb. S.P. 450° F.)—(500 lb. W.O.G.) All sizes

Fig. 881—Globe
Fig. 882—Angle
Renewable Bronze Seat and Disc
2 to 4 inches

Fig. 324—Swing Check
Renewable Bronze Seat and Disc
2 to 4 inches
Renewable Side Plugs

Fig. 1433—Gate
Inside Screw
Non-Rising Bronze Stem
Renewable Bronze Seats and Disc
1½ to 4 inches

Fig. 1435—Gate
Outside Screw and Yoke
Rising Bronze Stem
Renewable Bronze Seats and Disc
1½ to 4 inches

LARGE VALVES, FLANGE ENDS, IRON BODY BRONZE MOUNTED

(250 lb. S.P. 450° F.)—(500 lb. W.O.G.) 12 in. and smaller
(200 lb. S.P. 450° F.)—(400 lb. W.O.G.) 14 in. and larger

250 lb. S.P. 450° F.—All sizes
500 lb. W.O.G.—5 in. and smaller

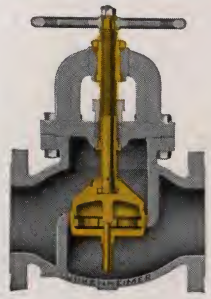


Fig. 884—Globe
Fig. 885—Angle
Renewable Bronze Seat and Disc. 2 to 8 inches

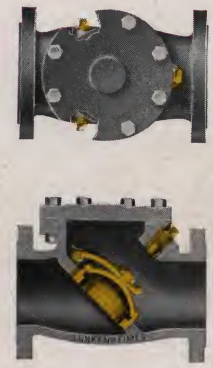


Fig. 323—Swing Check
Renewable Bronze Seat and Disc. 2 to 8 inches
Renewable Side Plugs

Fig. 1434—Gate
Inside Screw
Non-Rising Bronze Stem
Renewable Bronze Seats and Disc. 1½ to 12 inches

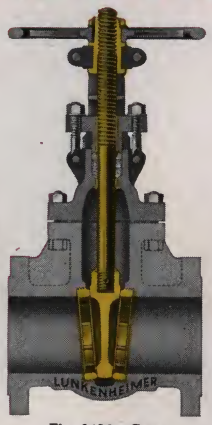


Fig. 1436—Gate
Outside Screw and Yoke
Rising Bronze Stem
Renewable Bronze Seats and Disc. 1½ to 18 in.

Fig. 1438—Gate With By-pass
Outside Screw and Yoke
Rising Bronze Stem
Renewable Bronze Seats and Disc. 6 to 18 inches

Refer to Index for other pages which give prices and detailed information on above illustrations.

LUNKENHEIMER HIGH DUTY VALVES
FOR HYDRAULIC, AIR, GAS, AND OIL SERVICE

2000 lb. W.O.G. Working Pressure
4000 lb. W.O.G. Non-Shock Pressure

Fig. 720—Globe
Renewable Bronze Disc
¼ to 2 inches

Fig. 721—Angle
Renewable Bronze Disc
¼ to 2 inches

Fig. 815—Horizontal Check
Renewable Bronze Disc
¼ to 2 inches

Fig. 816—Angle Check
Renewable Bronze Disc
¼ to 2 inches

LUNKENHEIMER QUICK OPERATING VALVES

Fig. 431
Bronze—Lever Gate
175 lb. S.P.
½ to 2½ inches

Fig. 430
Bronze—"Handy" Gate
75 lb. S.P.
½ to 4 inches

Fig. 635—Pull Lever
¼ to 2 inches
Fig. 1240—Grip Lever
¼ to ½ inch
Bronze Regrinding
with Stuffing Box
Stainless Steel Spring
200 lb. S.P.

Fig. 1836—Pull Lever
¼ to 2 inches
Fig. 1837—Grip Lever
¼ to ½ inch
Bronze "N-M-D"
(Non-Metallic Disc)
Stainless Steel Spring
150 lb. Pressure

Orders should specify service—steam, hot water, cold water, gas, air, gasoline, oil, butane, propane.

Fig. 1642—Screw Ends
Fig. 1643—Flange Ends
Gate "King-Clip"
Iron, Bronze Mounted
Screw Ends—¼ to 2 in.
150 lb. S.P. 225 lb. W.O.G.
2½ to 4 in.
125 lb. S.P. 175 lb. W.O.G.
Flange Ends—1 to 4 in.
125 lb. S.P. 175 lb. W.O.G.

Fig. 1579—Gate
Iron, Bronze Mounted
2, 2½ and 3 in. 125 lb.
3½, 4, 5 and 6 in. 100 lb.
S.P. or W.O.G.

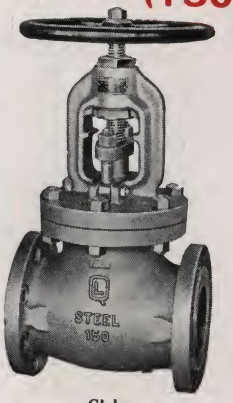
Fig. 1580—Gate
Iron, Bronze Mounted
2, 2½ and 3 in. 125 lb.
3½, 4, 5 and 6 in. 100 lb.
8 in. 75 lb.
10 and 12 in. 50 lb.
S.P. or W.O.G.

Fig. 628
"Handy" Gate
Iron, Bronze Mounted
75 lb. S.P.
2 to 8 in.

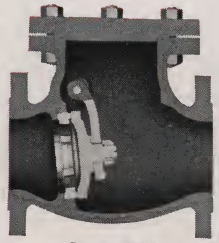
Fig. 432
Lever Gate
Iron, Bronze Mounted
175 lb. S.P., 2 to 3 in.
125 lb. S.P., 3½ and 4 in.
100 lb. S.P., 5 and 6 in.

Refer to Index for other pages which give prices and detailed information on above illustrations.

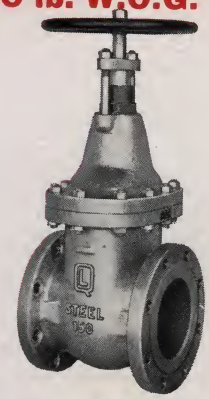
150 and 300 lb. S.P.
LUNKENHEIMER STEEL VALVES
(150 lb. S.P. 500° F.) (230 lb. W.O.G. 100° F.)



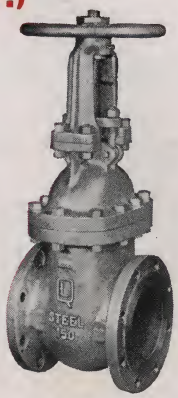
Globe
Fig. 1755—Flange Ends
Fig. 1756—Screw Ends
Angle
Fig. 1757—Flange Ends
Fig. 1758—Screw Ends
2 to 6 inches



Swing Check
Fig. 1759—Flange Ends
2 to 10 inches
Fig. 1760—Screw Ends
2 to 6 inches
Bolted Cap
Renewable Side Plugs



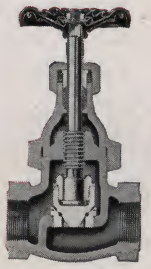
Gate
Fig. 1753—Flange Ends
2 to 24 inches
Fig. 1754—Screw Ends
2 to 6 inches
Inside Screw



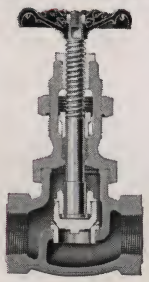
Gate
Fig. 1751—Flange Ends
2 to 24 inches
Fig. 1752—Screw Ends
2 to 6 inches
Outside Screw and Yoke

Carbon Steel (300 lb. S.P. 750° F.) (500 lb. W.O.G. 100° F.)
Carbon Molybdenum Steel (300 lb. S.P. 900° F.) (600 lb. W.O.G. 100° F.)
SMALL VALVES, SCREW ENDS

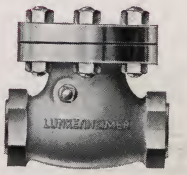
Full-Way Type
Fig. 1720—Globe
Fig. 1721—Angle
¼ to 2 inches
Bonnet Thread
Bushing



Throttling Type
Fig. 1722—Globe
Fig. 1723—Angle
½ to 2 inches
Bonnet Thread
Bushing



Full-Way Type
Fig. 1711—Globe
Fig. 1712—Angle
½ to 2 inches
Throttling Type
Fig. 1713—Globe
Fig. 1714—Angle
½ to 2 inches
Outside Screw and Yoke



Swing Check
Fig. 1598
1¼ to 1½ inches
Fig. 1490
2 inch
Bolted Cap
Fig. 1514—Monel
¼ to 1¼ inches
Screw Cap
Renewable Side Plugs

Fig. 1783
Horizontal Check
Fig. 1784
Angle Check
Screw Cap
¼ to 2 inches

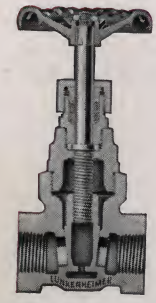


Fig. 1586—Gate
Monel
¼ to 1 inch
Inside Screw

LARGE VALVES, SCREW AND FLANGE ENDS

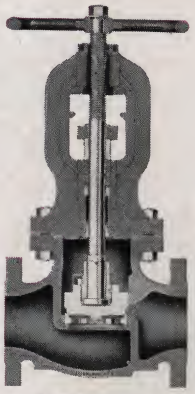
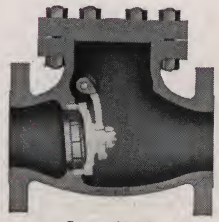
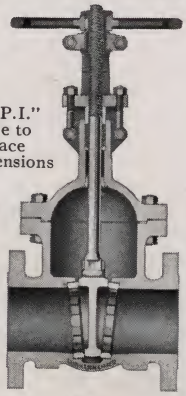


Fig. 1600—Globe
Fig. 1601—Angle
Flange Ends
2 to 10 inches
Fig. 1872—Globe
Fig. 1873—Angle
Screw Ends
2 to 4 inches



Swing Check
Fig. 1491—Flange Ends
2 to 10 inches
Fig. 1490—Screw Ends
2 to 4 inches
Renewable Side Plugs

"A.P.I."
Face to
Face
Dimensions



Gate
***Fig. 1938**—Flange Ends
1½ to 24 inches
***Fig. 1939**—with By-pass
5 to 24 inches
Fig. 1869—Screw Ends
1½ to 4 inches
Outside Screw and Yoke
Rising Stem

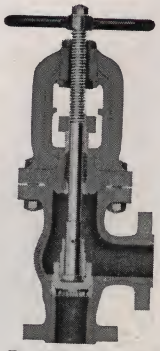
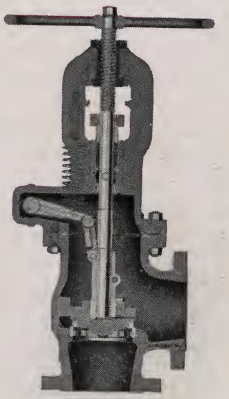


Fig. 1512—Blow-off
1½ to 2½ inches



Non-Return
Fig. 1798—Angle
Fig. 1797—Globe
3 to 10 inches

*Face to Face dimensions of Figs. 1938 and 1939 are the same as 250 lb. Iron Gate Valve Standard, and A.P.I. Standard for 300 lb. Steel Gate Valves.

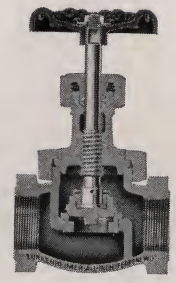
150 and 300 lb. Flange End valves are regular with 1/16 in. raised face with concentric serrations. Valves are also procurable with Welding Ends.

Refer to Index for other pages which give prices and detailed information on above illustrations.

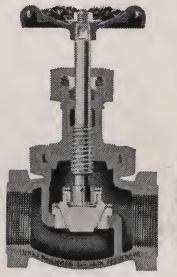
LUNKENHEIMER ALL-IRON VALVES

For Handling Solutions Which Attack Bronze But Not Iron

SMALL ALL-IRON VALVES, SCREW OR FLANGE ENDS



Full-Way Type
Fig. 1113—Globe
Fig. 1114—Angle
Renewable Iron Seat and Disc
Fig. 1857—Globe
Fig. 1858—Angle
Renewable "NT4" Nickel Alloy Seat and Disc
150 lb. S.P.
225 lb. W.O.G.
¼ to 2 inches



Plug Type
Fig. 1857-P—Globe
Fig. 1858-P—Angle
Renewable "NS5" Nickel Alloy Seat and Disc
150 lb. S.P.
225 lb. W.O.G.
¼ to 2 inches

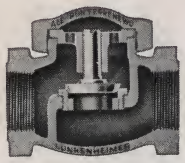


Fig. 1116
Renewable Iron Seat and Disc
Fig. 1859
Renewable "NT4" Nickel Alloy Seat and Disc
Horizontal Check
150 lb. S.P.
225 lb. W.O.G.
¼ to 2 inches

Fig. 1644—Screw Ends
¼ to 4 inches
Fig. 1645—Flange Ends
1 to 4 inches
Gate—"King-clip"
Rising Steel Stem

Fig. 1683—Screw Ends
½ to 4 inches
Fig. 1684—Flange Ends
1 to 4 inches
Gate—"King-clip"
Outside Screw and Yoke

Fig. 1646—Screw Ends
½ to 4 inches
Fig. 1647—Flange Ends
1 to 4 inches
Gate—"King-clip"
Quick Operating

Screw Ends ¼ to 2 in. { 150 lb. S.P. / 225 lb. W.O.G.
2½ to 4 in. { 125 lb. S.P. / 175 lb. W.O.G.
Flange Ends 1 to 4 in. { 125 lb. S.P. / 175 lb. W.O.G.

LARGE ALL-IRON VALVES, SCREW ENDS

Fig. 218—Globe
Fig. 219—Angle
125 lb. S.P.
200 lb. W.O.G.
Renewable Iron Seat and Disc
2 to 4 inches

Fig. 1104—Horizontal Check
125 lb. S.P.
200 lb. W.O.G.
Renewable Iron Seat and Disc
2 to 4 inches

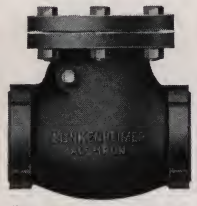


Fig. 1791—Swing Check
125 lb. S.P.
200 lb. W.O.G.
Renewable Iron Disc
2 to 4 inches
Renewable Side Plugs

Fig. 1575—Gate
125 lb. S.P.
200 lb. W.O.G.
2 to 6 inches
Non-Rising Steel Stem
Inside Screw
Renewable Iron Seats and Disc

Fig. 1577—Gate
125 lb. S.P.
200 lb. W.O.G.
2 to 6 inches
Rising Steel Stem
Outside Screw and Yoke
Renewable Iron Seats and Disc

Fig. 1602—Gate
Quick Operating
Renewable Iron Seats and Disc
2 to 3 inches—125 lb.
3½, 4, 5 and 6 inches—100 lb. S.P. or W.O.G.

LARGE ALL-IRON VALVES, FLANGE ENDS

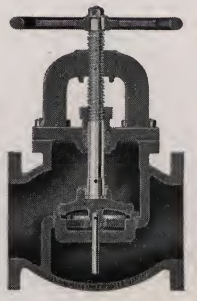


Fig. 618—Globe
Fig. 619—Angle
125 lb. S.P.
200 lb. W.O.G.
Renewable Iron Seat and Disc
2 to 4 inches

Fig. 1106—Horizontal Check
125 lb. S.P.
200 lb. W.O.G.
Renewable Iron Seat and Disc
2 to 4 inches

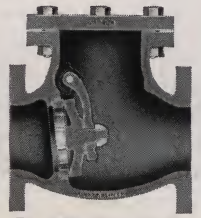


Fig. 1792—Swing Check
125 lb. S.P.
200 lb. W.O.G.
Renewable Iron Disc
2 to 4 inches
Renewable Side Plugs

Fig. 1576—Gate
125 lb. S.P.
200 lb. W.O.G.
2 to 6 inches
Non-Rising Steel Stem
Inside Screw
Renewable Iron Seats and Disc

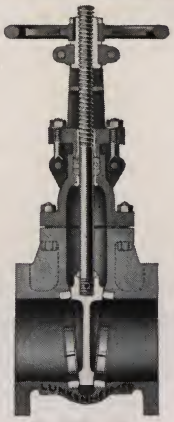


Fig. 1578—Gate
125 lb. S.P., 200 lb. W.O.G.
1½ to 12 inches
80 lb. S.P., 150 lb. W.O.G.
14 to 18 inches
Rising Steel Stem
Outside Screw and Yoke
Renewable Iron Seats and Disc

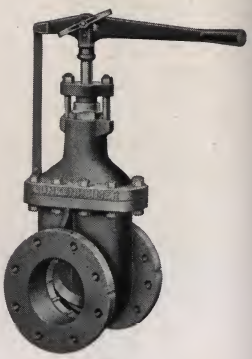


Fig. 1603—Gate
Quick Operating
Renewable Iron Seats and Disc
2 to 3 inches—125 lb.
3½, 4, 5 and 6 inches—100 lb. S.P. or W.O.G.

Refer to Index for other pages which give prices and detailed information on above illustrations.

LUNKENHEIMER RELIEF AND POP VALVES

RELIEF VALVES FOR WATER OR NON-INFLAMMABLE LIQUIDS

For Gasoline Service

Fig. 791—Male Inlet
Fig. 288—Female Inlet
Side Outlet
Bronze Regulating Wheel
5 to 250 Pounds
⅜ to 3 inches

Fig. 996—Male Inlet
Fig. 997—Female Inlet
Rough Bronze, Side Outlet
Iron Regulating Wheel
5 to 250 Pounds
⅜ to 3 inches

Fig. 986—Male Inlet
Fig. 995—Female Inlet
Rough Bronze, Side Outlet
Exposed Regulating Screw
5 to 250 Pounds
⅜ to 3 inches

Fig. 1359—Screw Outlet
Fig. 1144—Flange Outlet
Flange Inlet
Iron Bronze Mounted
5 to 250 Pounds
2 to 6 inches

Fig. 286—Female Inlet
Fig. 658—Male Inlet
Side Outlet
5 to 250 Pounds
⅜ to 3 inches

Outlet connection on all above Side Outlet Valves is the same pipe size as the inlet.

POP VALVES FOR GAS

Male Inlet

Female Inlet

Nickel Alloy Seat

Regulating Handwheel

Nickel Alloy Seat

Fig. 1213	5 to 250 lb. ⅜ to 3 in.	**Fig. 1214**
Fig. 1765	251 to 400 lb. ½ to 2 in.	**Fig. 1764**
Fig. 1772	401 to 700 lb. ½ to 2 in.	**Fig. 1771**
Fig. 1045	5 to 250 lb. ½ to 3 in.	**Fig. 1046**
Fig. 1766	251 to 400 lb. ½ to 2 in.	**Fig. 1767**
Fig. 1773	401 to 700 lb. ½ to 2 in.	**Fig. 1774**

Outlet connection on above Side Outlet valves is one pipe size larger than the inlet.
Bronze Pop Valves for pressures to 5000 lb. are procurable.

RELIEF VALVES FOR STEAM OR LIQUIDS

Fig. 658—Male Inlet
Fig. 286—Female Inlet
Side Outlet
5 to 250 Pounds—500° F.
⅜ to 3 inches

Fig. 656—Male Inlet
Fig. 287—Female Inlet
Top Outlet
5 to 250 Pounds—500° F.
⅜ to 3 inches

Outlet connection on above Side Outlet valves is same pipe size as inlet.

LUNKENHEIMER AIR DEVICES

POP SAFETY VALVES FOR AIR

These valves comply with paragraphs U. 3—U. 10 of the A. S. M. E. Unfired Pressure Vessel Code. Valves must have lifting levers.

Side Outlet is one pipe size larger than inlet.

Side Outlet **Top Outlet**

Fig. 1227	5 to 250 lb. ⅜ to 3 inches	**Fig. 1226**
Fig. 1705	251 to 400 lb. ½ to 2 inches	**Fig. 1704**
Fig. 1769	401 to 700 lb. ½ to 2 inches	**Fig. 1768**

Fig. 1571—Air Cock
Female Ends
With Stop Lugs
Stainless Steel Spring
150 lb. W.P.
¼ to 1½ inches

If male ends are desired insert extra heavy nipples in Fig. 1571

Fig. 1371
Hose Nipple

Pipe End—In.		Hose End—In.
⅛	x	¼
¼	x	¼
¼	x	⅜
¼	x	½
⅜	x	⅜
⅜	x	½

Bronze "N-M-D"
(Non-Metallic Disc)
Quick Operating Valve
Fig. 1837—Grip Lever
¼ to ½ inch
Fig. 1836—Pull Lever
¼ to 2 inches
Stainless Steel Spring
150 lb. Pressure

Orders should specify service—steam, hot water, cold water, gas, air, gasoline, oil, butane, propane.

Fig. 1240
Regrinding, Quick Operating Valve
Stainless Steel Spring
200 Pounds
¼ to ½ inch

Fig. 26—Air Nozzle
With Push Button
Female Pipe Threaded End
⅛—¼—⅜ inch

Fig. 96—Air Nozzle
With Push Button
Hose End
⅜ and ½ inch

Air Nozzles
With Lever—Renewable Non-Metallic Disc

Hose End
Fig. 1840-PT with Pointed Tip
Fig. 1840-ET with Extension Tip
Fig. 1840-FT with Flat Tip
⅜ and ½ inch

Female Pipe End
Fig. 1841-PT with Pointed Tip
Fig. 1841-ET with Extension Tip
Fig. 1841-FT with Flat Tip
⅛—¼—⅜—½ inch

Refer to Index for other pages which give prices and detailed information on above illustrations.

LUNKENHEIMER NEEDLE VALVES

BRONZE

BRONZE OR STEEL STEM

(200 lb. S.P.) (400 lb. W.O.G.)

Fig. 906—Globe
⅛ to ½ inch

Fig. 907—Angle
⅛ to ½ inch

Valves with Steel Stem have smaller seat opening providing finer regulation.

DIAMETER OF SEAT OPENING

Valve Size..In.	⅛	¼	⅜	½	¾	1
In Valves with Bronze Stems..	⅛	3/16	¼	5/16	7/16	9/16
In Valves with Steel Stems....	3/64	1/16	3/32	⅛	....	

FOR ¾ AND 1 INCH SIZES REFER TO THE GLAND TYPE ILLUSTRATED BELOW

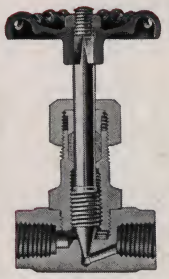
Fig. 909—Globe
With Union
⅛ to ½ inch

Fig. 910—Angle
With Union
⅛ to ½ inch

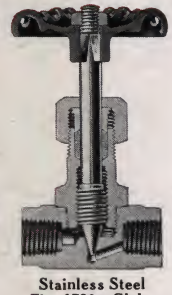
STEEL

WITH GLAND

3000 lb. W.O.G. 150° F.



Carbon Steel
Fig. 1728—Globe
⅛ to 1 inch
Fig. 1729—Angle
⅛ to ½ inch



Stainless Steel
Fig. 1730—Globe
⅛ to ½ inch
Fig. 1731—Angle
⅛ to ½ inch

Valve Size.....	⅛	¼	⅜	½	¾	1
Diam Seat Opening.	⅛	⅛	3/16	¼	⅜	½

LUNKENHEIMER BRONZE NEEDLE VALVES

WITH GLAND—BRONZE STEM ONLY

200 lb. S.P.
400 lb. W.O.G.

Indicator wheel on Figs. 1565, 1566, 1567 and 1568 has numbered graduation marks, permitting resetting to predetermined degree of opening.

UNION BONNET WITH GLAND
400 lb. S.P. 550° F.
1200 lb. W.O.G. 100° F.

Fig. 1205—Globe
¼ to 1 inch

Fig. 1206—Angle
¼ to 1 inch

ALL 1 INCH NEEDLE VALVES HAVE UNION BONNET CONSTRUCTION

Fig. 1208—Globe
With Union
¼ to ½ inch

Fig. 1209—Angle
With Union
¼ to ½ inch

Fig. 1567—Globe
With Union
Fig. 1565—Globe
Without Union
¼ and ⅜ inch

Fig. 1568—Angle
With Union
Fig. 1566—Angle
Without Union
¼ and ⅜ inch

Fig. 1238—Globe
¼ to ½ inch

The ¼, ⅜, ½ and ¾ inch sizes have been approved by the Underwriters' Laboratories for control of hazardous liquids. The Underwriters' Laboratories prescribe 50 pounds per square inch as the maximum pressure for hazardous liquid equipment.

LUNKENHEIMER OIL AND GREASE CUPS

BOTTLE OILERS

Straight Blank Shank, Loose Wire Feed

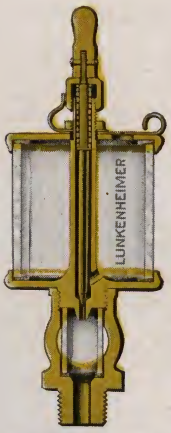


Fig. 1300—"Sentinel"
with Sight Feed
Nos. 0 to 8

Fig. 1815
Globe Body

Fig. 1816
Flat Side Body

No. 3 only—Capacity oil, 4 oz.

For use in ⅛ in. pipe tapped or 11/32 in. drilled holes.

For ¼ in. or ⅜ in. pipe tapped holes use
Metal Adapter—Fig. 1817.

CONSTANT LEVEL OIL CONTROL

Fig. 1834—"Alvor"

Size No.....	1	3	5
Pipe Thread In...	¼	¼	¼
Capacity Oil Oz...	1	4	8

Fig. 510
Bronze—"Ideal"
Nos. 00 to 5

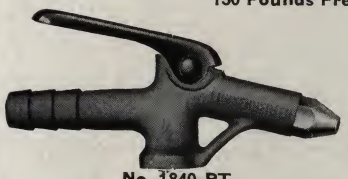
Fig. 513
Bronze—"Tiger"
With Leather Washer
Nos. 000 to 4

Refer to Index for other pages which give prices and detailed information on above illustrations.

Lunkenheimer Bronze Air Nozzles

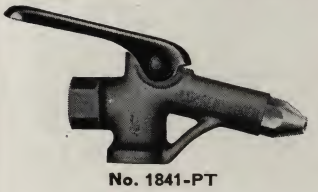
Lever Operated—Non-Metallic Disc Pointed, Flat or Extension Tip

150 Pounds Pressure



No. 1840-PT

Air nozzles are more effective and safer to use than brushes, rags, and hand bellows, for removing dust, dirt, chips, filings, borings, sand, lint, liquid deposits and other matter. First cost is earned many times in saving of time and labor, and prevention of air wastage.



No. 1841-PT

The renewable non-metallic disc insures seat tightness without the necessity of regrinding.

Unless otherwise specified, ½-inch No. 1840-PT Air Nozzle with pointed tip and integral hose end will be furnished.

Air Nozzle, Integral Hose End

Size Hose End.....inches		⅜	½
No. 1840-PT, Pointed Tip.....each		$3.30	$3.40
No. 1840-ET, Extension Tip, 10 In. Long..each		4.80	4.90
No. 1840-FT, Flat Tip.....each		4.30	4.40

Air Nozzle, Female Pipe End

Size Female Pipe End.....in.	*⅛	¼	†⅜	†½
No. 1841-PT, Pointed Tip.....ea.	$2.70	$2.70	$3.00	$4.00
No. 1841-ET, Ext. Tip, 10 In...ea.	4.00	4.00	4.40	5.50
No. 1841-FT, Flat Tip.....ea.	3.60	3.60	3.90	5.00

Parts

No. 1860, Disc with Holder.....ea.	$.50
No. 1854, Pointed Tip, ⅛ In. Diam. Opening.....ea.	.45
No. 1855, Ext. Tip, 10″ Long, 5/64″ Diam. Opening..ea.	1.60
No. 1856, Flat Tip, 7/16 In. by 1/32 In. Opening.....ea.	1.00

*Furnished with reducing bushing. †Furnished with adapter.

Lunkenheimer Bronze Air Nozzles

Regrindable Bronze Seat and Disc Push Button or Lever Operated

150-Pound Pressure

Push button types have 5/64-inch I.D. outlet; lever types have 3/32-inch I.D. outlet. Unless otherwise specified, ½-inch Fig. 96 will be furnished.

With Integral Hose End

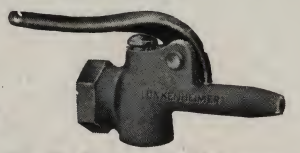
No. 96, Hose End with Push Button

No. 5, Hose End with Lever

Size Hose End.....inches	⅜	½
No. 96, with Push Button.....each	$2.80	$3.00
No. 5, with Lever.....each	3.50	3.80

With Female Pipe Threaded End

No. 26, Female Pipe Threaded End with Push Button



No. 32, Female Pipe Threaded End with Lever

Size Female Pipe End.....inches	⅛	¼	⅜
No. 26, with Push Button.....each	$3.00	$3.30	$3.60
No. 32, with Lever.....each	3.80	4.00	4.30

Lunkenheimer Bronze N-M-D Globe and Angle Valves

Inside Screw—Screwed Bonnet Renewable Non-Metallic Disc

Screwed Ends
150 Lb. S.P., 300 Lb. W.O.G.

No. 123, Globe

No. 214, Angle

Non-metallic disc is easily and quickly renewed.

Orders should specify whether discs are for steam, hot water, cold water, gas, air, gasoline, oil, butane or propane.

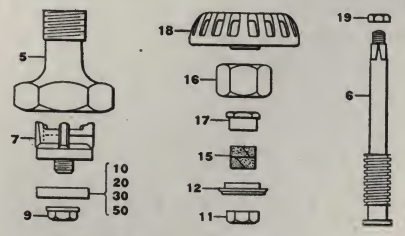
Size Inches	No. 123 Globe Each	No. 214 Angle Each	End to End Inches	Center to End Inches
⅛	$2.40	$2.40	2	15/16
¼	2.60	2.60	2 3/16	1 1/32
⅜	3.00	3.00	2½	1 3/16
½	3.60	3.60	2 13/16	1 5/16
¾	4.70	4.70	3 5/16	1 9/16
1	6.60	6.60	4	1 15/16
1¼	8.60	8.60	4½	2 3/16
1½	12.00	12.00	5 1/16	2 7/16
2	19.00	19.00	6⅛	2 15/16
2½	34.00	34.00	7¼	3 7/16
3	48.00	48.00	8⅜	4

Parts for Lunkenheimer N-M-D Bronze Globe and Angle Valves

For No. 123 Globe and No. 214 Angle Valves

Screwed: 150 Pounds Steam Pressure
300 Pounds Cold Water, Oil, Gas

Flanged: 150 Pounds Steam Pressure
225 Pounds Cold Water, Oil, Gas



5 Bronze Bonnet
6 Bronze Stem
7 Bronze Disc Holder
9 Bronze Disc Locknut
11 Bronze Disc Locknut
12 Bronze Disc Plate
16 Bronze Stuffing Box
17 Bronze Gland
18 Malleable Iron, Non-Heat Handwheel
19 Bronze Handwheel Locknut
*.. Disc Holder Comp. with Disc
†.. Trimmings Comp. All Parts but Body
15 Stem Packing
10 Disc
20 Disc
30 Disc
50 Disc

Part No.	Size Valve, Inches—Each ⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3
5	$.65	$.80	$.85	$.90	$1.20	$1.60	$2.00	$3.00	$4.50	$9.30	$13.60
6	.35	.35	.45	.55	.75	1.00	1.30	1.60	2.00	4.30	7.00
7	.45	.45	.45	.50	.65	.85	1.00	1.75	3.00	4.80	6.00
9	.10	.10	.10	.10	.10	.20	.20	.30	.45	....	....
11	...	...	...	...	...	...	...	...	....	.45	.45
12	...	...	...	...	...	...	...	...	....	.75	1.10
16	.30	.35	.40	.45	.45	.60	.80	.90	1.10	1.80	1.80
17	.30	.35	.40	.40	.45	.60	.65	1.10	1.20	2.60	2.70
18	.20	.20	.20	.30	.45	.45	.55	.65	.75	1.20	1.40
19	.10	.10	.10	.10	.10	.20	.20	.20	.45	.50	.75
*	.60	.60	.75	.80	1.00	1.30	1.50	2.50	4.00	6.90	9.00
†‡	1.60	2.00	2.30	2.40	3.30	4.50	6.00	8.00	12.60	22.70	31.80
15	Prices upon Application										
10	.20	.20	.25	.28	.30	.40	.55	.66	1.00	1.30	2.00
20	.06	.06	.08	.08	.10	.12	.18	.24	.36	.48	.80
30	.06	.06	.08	.08	.10	.12	.18	.24	.36	.48	.80
50	.06	.06	.08	.08	.10	.12	.18	.24	.36	.48	.80

‡Price is per set.

Lunkenheimer Non-Metallic Discs

For N-M-D Valves

Each disc is compounded for maximum wear and tightness in its particular service.

Globe and angle valves can be furnished with Nos. 10, 20, 30 or 50 discs; No. 20 discs are regularly supplied unless otherwise specified.

No. 10

No. 20

No. 30

No. 50

No. 10. For saturated steam free from scale to 150 pounds.

No. 20. For hot water to 250 pounds at 250°F., to 300 pounds at 150°F.; saturated steam to 150 pounds in check and quick operating valves. In globe and angle valves, No. 20 is used for saturated steam to 150 pounds where scale is present in the steam.

No. 30. For cold water, gas, and air up to 300 pounds.

No. 50. For gasoline, oil, butane and propane.

Standard package, 12 of one size and one kind. Standard carton, discs for 1/8 to 1 1/4-inch valves, 6 packages; discs for 1 1/2 and 2-inch valves, 3 packages.

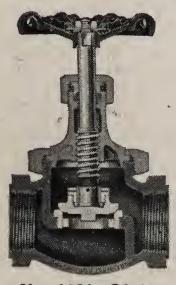
Size Valve Inches	No. 10 Each	Nos. 20 30 and 50 Each
1/8 & 1/4	$.20	$.06
3/8	.25	.08
1/2	.28	.08
3/4	.30	.10
1	.40	.12
1 1/4	.55	.18
1 1/2	.66	.24
2	1.00	.36
2 1/2	1.30	.48
3	2.00	.80

Lunkenheimer Ferrenewo Iron Body Globe and Angle Valves

Renewable Nickel Alloy Seat and Disc Union Bonnet

Screwed Ends

150 Lb. S.P., 450°F.; 225 Lb. W.O.G.


No. 1021, Globe Regular

Seating surfaces are regrindable; all parts are renewable.

In plug type seat and disc valves the seating material is of uniformly great hardness and retains its hardness at high temperatures. Will not gall or seize and is highly resistant to corrosion.

The greater area of the full plug width seating surface retards wire drawing and promotes longer service life.

No. 1021-P, Globe Plug Type

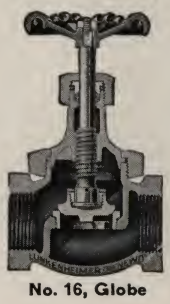
Size In.	No. 1021 Globe No. 1022 Angle Each	No. 1021-P Globe No. 1022-P Angle Each	End to End Inches	Center to End Inches
1/4	$3.50	$4.00	2 9/16	1 3/16
3/8	3.60	4.20	2 11/16	1 5/16
1/2	4.00	4.50	3	1 7/16
3/4	5.00	6.10	3 9/16	1 5/8
1	6.00	7.50	4 1/8	1 15/16
1 1/4	8.60	10.50	4 3/4	2 1/4
1 1/2	12.00	15.00	5 1/4	2 7/16
2	19.00	23.00	6 1/4	3
*2 1/2	26.00	.....	7 3/8	3 11/16
*3	35.00	.....	8 3/8	4 3/16
*4	60.00	.....	10	5

*Outside screw and yoke.

Lunkenheimer Renewo Bronze Globe and Angle Valves

Nickel Alloy Renewable Seat and Disc—Union Bonnet

Screwed—300 Lb. S.P. 550°F.; 600 Lb. W.O.G.
Flanged—300 Lb. S.P. 550°F.; 500 Lb. W.O.G.


No. 16, Globe

Seating surfaces are regrindable; all parts are renewable.

Stuffing box is repackable under pressure with valve wide open.

Disc swivels on stem.

Sizes 2 inches and larger have slotted bonnet ring; 2 1/2 inches and larger have a solid rim cast iron wheel.

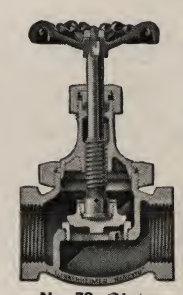
No. 17, Angle

Size Inches	Screwed: No. 16 Globe No. 17 Angle Each	Screwed: End to End Inches	Screwed: Center to End Inches	Flanged: No. 19 Globe No. 20 Angle Each	Flanged: Face to Face Inches	Flanged: Center to Face Inches	Flanged: Diam. Flange Inches
1/4	$4.60	2 5/16	1 1/8	.....	....	....	...
3/8	5.00	2 1/2	1 3/16	.....	....	....	...
1/2	6.60	2 7/8	1 3/8	$20.00	3 15/16	2 17/32	3 3/4
3/4	8.80	3 9/16	1 5/8	22.50	4 11/16	2 31/32	4 5/8
1	11.00	4 1/8	1 15/16	28.00	5 1/4	3 7/32	4 7/8
1 1/4	14.50	4 3/4	2 1/4	35.00	5 3/4	3 15/32	5 1/4
1 1/2	20.00	5 1/4	2 7/16	50.00	7 1/4	3 7/8	6 1/8
2	33.00	6 3/8	3	72.00	8 1/4	4 1/2	6 1/2
2 1/2	55.00	7 3/8	3 5/8	100.00	9 1/4	5 1/8	7 1/2
3	83.00	8 3/8	4 1/8	140.00	10 5/16	5 19/32	8 1/4

Lunkenheimer Renewo Bronze Globe and Angle Valves

Nickel Alloy Renewable Seat and Disc—Union Bonnet

Screwed—200 Lb. S.P. 500°F.; 400 Lb. W.O.G.
Flanged—150 Lb. S.P. 500°F.; 225 Lb. W.O.G.


No. 73, Globe

Seating surfaces are regrindable; all parts are renewable.

Stuffing box is repackable under pressure with valve wide open.

Disc swivels on stem.

Sizes 2 inches and larger have slotted bonnet ring; 2 1/2 inches and larger have a solid rim cast iron wheel.

No. 72, Angle

Size Inches	Screwed: No. 73 Globe No. 72 Angle Each	Screwed: End to End Inches	Screwed: Center to End Inches	Flanged: No. 70 Globe No. 69 Angle Each	Flanged: Face to Face Inches	Flanged: Center to Face Inches	Flanged: Diam. Flange Inches
1/4	$4.00	2 1/8	1	.....	...	...	...
3/8	4.50	2 5/16	1 1/16	.....	...	...	...
1/2	5.20	2 5/8	1 1/4	$13.50	3 7/16	2 1/4	3 1/2
3/4	7.00	3 1/4	1 1/2	16.00	4	2 1/2	3 7/8
1	8.00	3 3/4	1 11/16	19.00	4 9/16	2 5/8	4 1/4
1 1/4	12.00	4 1/4	1 15/16	24.00	5 1/16	2 7/8	4 5/8
1 1/2	16.00	4 3/4	2 3/16	30.00	6 1/8	3 3/32	5
2	25.00	5 3/4	2 5/8	44.00	7 1/4	3 5/8	6
2 1/2	45.00	6 13/16	3 5/16	66.00	8	4 1/2	7
3	64.00	7 3/4	3 13/16	90.00	9	4 7/8	7 1/2

Lunkenheimer Renewo Bronze Globe and Angle Valves

Plug Type—Nickel Alloy Renewable Seat and Disc Union Bonnet

Screwed Ends
200 Lb. S.P. 500°F.; 400 Lb. W.O.G.

No. 73-P, Globe

No. 72-P, Angle

The nickel alloy seating material is of uniformly great hardness and retains its hardness at high temperatures. It is resistive to wear, galling, abrasion, erosion and corrosion.

Size Inches	No. 73-P Globe Each	No. 72-P Angle Each	End to End Inches	Center to End Inches
1/4	$5.00	$5.00	2 1/8	1
3/8	5.40	5.40	2 5/16	1 1/16
1/2	6.60	6.60	2 5/8	1 1/4
3/4	8.00	8.00	3 1/4	1 1/2
1	10.00	10.00	3 3/4	1 11/16
1 1/4	14.00	14.00	4 1/4	1 15/16
1 1/2	20.00	20.00	4 3/4	2 3/16
2	30.00	30.00	5 3/4	2 5/8
2 1/2	55.00	55.00	6 13/16	3 5/16
3	80.00	80.00	7 3/4	3 13/16

Lunkenheimer Renewo Bronze Globe and Angle Valves

Plug Type—Nickel Alloy Renewable Seat and Disc Union Bonnet

Screwed Ends
300 Lb. S.P. 550°F.; 600 Lb. W.O.G.

No. 16-P, Globe

No. 17-P, Angle

The nickel alloy seating material is of uniformly great hardness and retains its hardness at high temperatures. It is resistive to wear, galling, abrasion, erosion and corrosion.

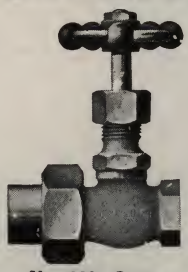
Size Inches	No. 16-P Globe Each	No. 17-P Angle Each	End to End Inches	Center to End Inches
1/4	$5.40	$5.40	2 5/16	1 1/8
3/8	5.70	5.70	2 1/2	1 3/16
1/2	7.40	7.40	2 7/8	1 3/8
3/4	9.70	9.70	3 9/16	1 5/8
1	12.00	12.00	4 1/8	1 15/16
1 1/4	16.00	16.00	4 3/4	2 1/4
1 1/2	22.00	22.00	5 1/4	2 7/16
2	36.50	36.50	6 3/8	3
2 1/2	60.00	60.00	7 3/8	3 5/8
3	91.00	91.00	8 3/8	4 1/8

Lunkenheimer Bronze Needle Valves

Bronze or Steel Stem

200 Lb. S.P.—400 Lb. W.O.G.

No. 906, Globe



No. 909, Globe With Union

No. 907. Angle

The Lunkenheimer standard for the included angle of the tapered seating face at end of stem is 30°.

Valves with steel stem have smaller seat openings than valves with bronze stem and provide finer regulation. Diameters of seat openings are given below.

Bronze Stem, Rough Body

Size In.	Diam. Seat Openings Inches	Female Ends: No. 906 Globe Each	Female Ends: No. 907 Angle Each	Female Ends: No. 908 Cross Each	Female Union on Outlet: No. 909 Globe Each	Female Union on Outlet: No. 910 Angle Each
1/8	1/8	$1.90	$2.00	$3.90	$3.70	$3.20
1/4	3/16	2.00	2.10	4.00	3.80	3.40
3/8	1/4	2.20	2.40	6.00	4.50	4.00
1/2	5/16	2.80	3.00	7.50	6.50	5.80

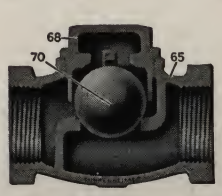
Steel Stem, Rough Body

Size In.	Diam. Seat Openings In.	Female Ends: No. 906-SS Globe Each	Female Ends: No. 907-SS Angle Each	Female Union on Outlet: No. 909-SS Globe Each	Female Union on Outlet: No. 910-SS Angle Each
1/8	3/64	$2.40	$2.50	$4.00	$3.50
1/4	1/16	2.50	2.70	4.30	3.80
3/8	3/32	3.20	3.30	5.25	4.60
1/2	1/8	3.70	4.10	7.50	6.60

Lunkenheimer Bronze Ball Check Valves

Horizontal, Angle and Vertical Screwed Cap

200 Lb. S.P., 500°F.
400 Lb. W.O.G.



No. 416 Horizontal

No. 739 Angle

No. 740 Vertical

This valve embodies features essential to successful operation under service conditions for which the ball type of check valve is suitable.

The non-ferrous metal ball is manufactured under the most modern method, is specially gaged, and the guide is designed to minimize wear.

Size Inches	No. 416, Horizontal Each	No. 416, Horizontal End to End, In.	No. 739, Angle Each	No. 739, Angle Center to End, In.	No. 740, Vertical Each	No. 740, Vertical End to End, In.
1/8	$2.00	1 9/16	$2.20	3/4	$2.20	1 1/2
1/4	2.20	1 5/8	2.40	13/16	2.40	1 15/16
3/8	2.60	2 1/4	2.80	1	2.80	2 3/16
1/2	3.30	2 5/8	3.60	1 3/16	3.60	2 7/16
3/4	4.50	3 3/16	5.00	1 3/8	5.00	2 13/16
1	6.00	3 3/4	6.60	1 11/16	6.60	3 5/16
1 1/4	9.00	4 5/16	10.00	1 15/16	10.00	3 13/16
1 1/2	14.00	4 13/16	16.50	2 3/16	16.50	4 1/8
2	20.00	5 15/16	25.00	2 11/16	25.00	5
2 1/2	40.00	7 1/16	40.00	3 3/16	40.00	6 1/16
3	60.00	7 7/8	60.00	3 5/8	60.00	6 9/16

Lunkenheimer Bronze Check Valves

Horizontal, Angle, and Vertical
Regrinding—Screw Cap

Screwed Ends—300 Lb. S.P. 550°F.; 600 Lb. W.O.G.

Seating surfaces are regrindable. Disc and other parts are renewable. Sizes 2½ inches and larger have a round slotted cap instead of hexagonal cap.

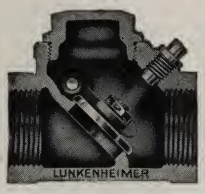
No. 413, Horizontal Screwed

Size In.	No. 413 Horiz. No. 621 Angle Each	No. 622 Vertical Each	Horiz. End to End Inches	Angle Center to End Inches	Vertical End to End Inches
1/4	$3.00	$4.50	2 1/4	1	2 3/16
3/8	3.40	4.75	2 7/16	1 3/16	2 5/16
1/2	4.20	5.20	2 3/4	1 5/16	2 11/16
3/4	5.50	7.20	3 3/8	1 9/16	3 1/16
1	7.20	9.00	3 3/4	1 13/16	3 3/8
1 1/4	10.00	12.50	4 5/16	2 1/8	3 7/8
1 1/2	13.50	18.00	4 7/8	2 3/8	4 1/8
2	21.00	26.00	5 7/8	2 11/16	4 15/16
2 1/2	38.00	48.00	7 1/16	3 9/16	5 3/4
3	57.00	75.00	7 7/8	4	6 3/8

No. 554 Lunkenheimer Bronze Regrinding Swing Check Valves

Screwed Cap

200 Lb. S.P., 500° F.
400 Lb. W.O.G.



The seating surfaces are regrindable and all parts are renewable. Two side plugs are provided which act as bearings for the disc carrier pin and these being also renewable, the perfect seating of the disc can at all times be maintained. The valves may be connected in either a horizontal or vertical position.

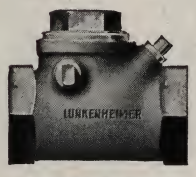
Size Inches	Screwed Price, Ea.	Size Inches	Screwed Price, Ea.	Size Inches	Screwed Price, Ea.
1/4	$6.25	1	$8.00	2 1/2	$38.00
3/8	6.25	1 1/4	11.00	3	51.00
1/2	6.60	1 1/2	14.00	...	.....
3/4	7.50	2	20.00	...	.....

Lunkenheimer Bronze Regrinding Swing Check Valves

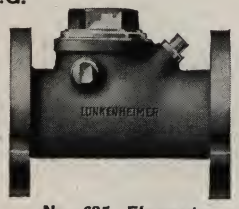
Screwed Cap

Screwed
300 Lb. S.P., 550° F.
600 Lb. W.O.G.

Flanged
300 Lb. S.P., 550° F.
500 Lb. W.O.G.



No. 624, Screwed



No. 625, Flanged

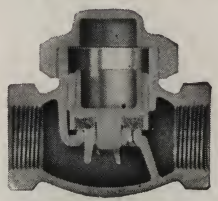
Seating surfaces are regrindable and all parts are renewable. Two side plugs provided which act as bearings for disc carrier pin and these being also renewable, perfect seating of the disc can at all times be maintained. Valves may be connected in either a horizontal or vertical position. Having a practically straightway flow channel, and areas throughout the body being in excess of that of the connecting pipe, an unobstructed flow is insured.

Size Inches	No. 624 Screwed Each	No. 625 Flanged Each	No. 625 Flanged Face to Face Inches	No. 625 Flanged Diam. Flanges Inches
1/4	$6.80	.....	...	...
3/8	7.00	.....	...	...
1/2	7.70	$18.00	4 11/16	3 3/4
3/4	9.00	20.00	5 7/16	4 5/8
1	10.00	26.00	5 15/16	4 7/8
1 1/4	14.00	36.00	6 7/16	5 1/4
1 1/2	19.00	54.00	7 3/16	6 1/8
2	27.00	75.00	8 1/8	6 1/2
2 1/2	49.00	110.00	9 5/16	7 1/2
3	75.00	140.00	10 3/16	8 1/4

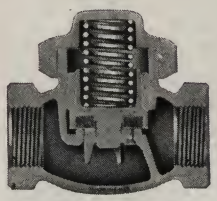
Lunkenheimer Bronze N-M-D Lift Check Valves

Horizontal and Angle
Screwed Cap
Renewable Non-Metallic Disc

Screwed Ends
150 Lb. S.P., 300 Lb. W.O.G.



No. 231, Horizontal Without Spring



No. 233, Horizontal With Stainless Steel Spring

Non-metallic disc is easily and quickly renewed.

Orders should specify whether discs are for steam, hot water, cold water, gas, air, gasoline, oil, butane or propane.

Size Inches	No. 231 Horizontal Each	No. 272 Angle Each	No. 233 Horizontal Spring Loaded Each	End to End Inches	Center to End Inches
1/8	$2.	$2.40	$3.00	2	15/16
1/4	2.[illegible]	2.60	3.20		1 1/32
3/8	2.90	2.90	3.50		
1/2	3.20	3.20	4.		
3/4	4.20	4.20	[illegible]		
1	5.80	5.80			
1 1/4	8.00	8.00			
1 1/2	11.00	11.00			
2	16.00	16.00			

Lunke[illegible]er Br[illegible]

Double V[illegible]
Insi[illegible]
[illegible] S.P.—200 Lb. W[illegible]

No. 2125, Screwed

No. 2126, Flanged

Ball and socket-bearing discs adjust themselves to taper seats insuring tight valve. Disc wing guides and body guide channels beveled for easy assembly. Stem has strong thread and extra heavy head. Large stuffing box repackable under pressure. Hexagon head gland all sizes.

Size Inches	No. 2125, Screwed Each	No. 2125, Screwed End to End Inches	No. 2126, Flanged Each	No. 2126, Flanged Face to Face Inches	No. 2126, Flanged Diam. Flanges Inches
1/4	$2.40	1 7/8	.....	...	...
3/8	2.40	2	.....	...	...
1/2	2.60	2 3/16	.....	...	...
3/4	3.30	2 1/2	$14.00	3 1/4	3 7/8
1	4.40	2 13/16	16.00	3 1/2	4 1/4
1 1/4	6.00	3 3/16	19.50	3 13/16	4 5/8
1 1/2	8.00	3 1/2	24.00	4 1/8	5
2	11.00	4 1/16	37.50	5 1/16	6
2 1/2	19.00	4 11/16	49.00	6	7
3	28.00	5 1/4	57.50	6 15/16	7 1/2

Lunkenheimer Bronze Gate Valves

Single Wedge Disc—Taper Seat—Non-Rising Stem
Inside Screw—Screwed Bonnet

125 Lb. S.P.—200 Lb. W.O.G.

No. 2129, Screwed

No. 2130, Flanged

Heavy single wedge disc; well proportioned. Beveled guide channels in body provide easy assembly. Stem has powerful thread, accurately machined; heavy root diameter to carry thrust and torsional strain, insuring seat tightness. Large stuffing box repackable under pressure. Hexagon head gland all sizes. All parts renewable.

	No. 2129, Screwed		No. 2130, Flanged		
Size Inches	Each	End to End Inches	Each	Face to Face Inches	Diam. Flanges Inches
1/4		1 7/8	.....	...	...
3/8		2	.....	...	...
		2 3/16	.....	...	...
		[illegible]	$14.00	3 1/4	3 7/8
			16.00	3 1/2	4 1/4
			19.50	3 13/16	4 5/8
			24.00	4 1/8	5
			37.50	5 1/16	6
			49.00	6	7
			57.50	6 15/16	7 1/2

[illegible]onze G[illegible] Valves

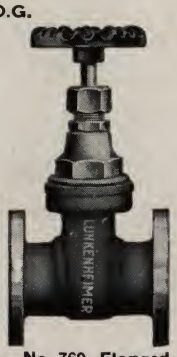
[illegible]ising Stem
[illegible]crew—Screw[illegible]net

Screwed
200 Lb. S.P., 500°F.—400 Lb. W.O.G.

Flanged
150 Lb. S.P., 500°F.—225 Lb. W.O.G.

No. 768, Screwed

Wedge disc, double seated type, permitting pressure to be taken from either end. Disc is well guided by ribs cast within body. All parts renewable, including nickel alloy seat rings on sizes 1-inch and larger. Stuffing box is repackable under pressure when valves are full open. Gland provided in stuffing box for 1-inch and larger sizes.



No. 769, Flanged

	No. 768, Screwed		No. 769, Flanged		
Size Inches	Each	End to End Inches	Each	Face to Face Inches	Diam. Flanges Inches
1/4	$3.90	2 1/16	.....	...	...
3/8	3.90	2 3/16	.....	...	...
1/2	4.60	2 7/16	.....	...	...
3/4	5.60	2 3/4	$23.00	3 1/2	3 7/8
1	8.00	3 5/16	28.00	4 1/8	4 1/4
1 1/4	10.00	3 5/8	33.00	4 1/2	4 5/8
1 1/2	13.20	3 15/16	43.00	4 15/16	5
2	21.50	4 9/16	62.00	5 7/8	6
2 1/2	31.00	5 1/4	85.00	6 3/4	7
3	50.00	5 5/8	110.00	7 3/8	7 1/2

Lunkenheimer Bronze Gate Valves

Single Wedge Disc—Taper Seat—Non-Rising Stem—
Inside Screw—Screwed Bonnet

Screwed
300 Lb. S.P., 550°F.
600 Lb. W.O.G.

Flanged
300 Lb. S.P., 550°F.
500 Lb. W.O.G.

No. 771, Screwed

Wedge disc, double seated type, permitting pressure to be taken from either end. Disc is well guided by ribs cast within body. All parts renewable, including nickel alloy seat rings on sizes 1-inch and larger. Stuffing box is repackable under pressure when valves are full open. Gland provided in stuffing box for 1-inch and larger sizes.

No. 772, Flanged

	No. 771, Screwed		No. 772, Flanged		
Size Inches	Each	End to End Inches	Each	Face to Face Inches	Diam. Flanges Inches
1/4	$10.00	2 5/16	.....	....	...
3/8	10.00	2 7/16	.....	....	...
1/2	12.00	2 3/4	.....	....	...
3/4	14.40	3 1/16	$26.00	4 5/16	4 5/8
1	16.00	3 13/16	32.00	4 15/16	4 7/8
1 1/4	22.50	4 3/16	43.00	5 3/16	5 1/4
1 1/2	33.00	4 9/16	60.00	6	6 1/8
2	46.00	5 1/8	82.00	6 3/4	6 1/2
2 1/2	80.00	5 13/16	130.00	7 1/4	7 1/2
3	123.00	6 1/4	190.00	7 9/16	8 1/4

No. 430 Lunkenheimer Handy Bronze Gate Valves

75 Lb. S.P.

A quick opening valve for handling water, oils, lactic and other classes of liquids and low pressure steam.

The ball and socket bearing between the discs is the most flexible and practical wedging principle and prevents many unusual conditions from interfering with the functioning of the disc.

Size Inches	No. 430 Screwed Each	Size Inches	No. 430 Screwed Each	Size Inches	No. 430 Screwed Each
1/2	$6.00	1 1/2	$13.00	3 1/2	$110.00
3/4	6.60	2	20.00	4	160.00
1	8.50	2 1/2	35.00	...	.....
1 1/4	11.00	3	50.00	...	.....

No. 431 Lunkenheimer Bronze Lever Gate Valves

For 175 Pounds Steam Pressure

For use on steam, water, oil and other liquids.

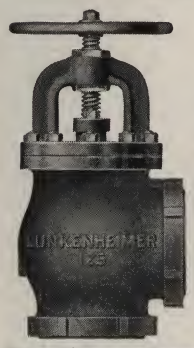
The simple and practical ball and socket wedging principle of the disc construction provides positive seating of the discs under trying service conditions.

Size Inches	No. 431 Screwed Each	Size Inches	No. 431 Screwed Each
1/2	$7.10	1 1/2	$18.00
3/4	8.50	2	25.00
1	10.50	2 1/2	50.00
1 1/4	13.00	...	.....

Lunkenheimer Iron Body Globe, Angle and Cross Valves

Bronze Mounted—Outside Screw—Flanged Yoke Bonnet

Class 125 { 2 to 5 In.—125 Lb. S.P., 450°F.; 200 Lb. W.O.G.
6 to 12 In.—125 Lb. S.P., 450°F.
14 In. — 80 Lb. S.P., 450°F.



Seating surfaces are regrindable; seat, disc and all other parts are renewable; stuffing box can be repacked when valves are under pressure and full open.

No. 1121 Angle, Screwed

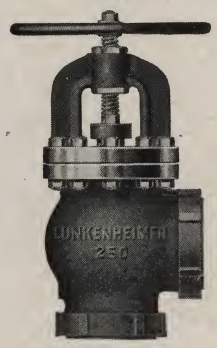
No. 1123 Globe, Flanged

Size In.	Screwed: No. 1120 Globe No. 1121 Angle Each	End to End In.	Ctr. to End In.	Flanged: No. 1123 Globe No. 1124 Angle Each	No. 1125 Cross Each	Face to Face In.	Ctr. to Face In.	Diam. Flange In.
2	$7.00	6 3/8	3 3/16	$8.60	$11.00	8	4	6
2 1/2	9.00	7 3/8	3 11/16	10.75	14.50	8 1/2	4 1/4	7
3	12.50	8 3/8	4 3/16	15.00	20.00	9 1/2	4 3/4	7 1/2
3 1/2	15.25	9	4 1/2	18.50	25.00	10 1/2	5 1/4	8 1/2
4	19.00	10	5	22.50	28.50	11 1/2	5 3/4	9
5	27.00	12	6	31.00	41.00	13	6 1/2	10
6	37.50	13 7/8	6 15/16	42.00	54.00	14	7	11
8	.....	....	...	77.00	100.00	19 1/2	9 3/4	13 1/2
10	.....	....	...	123.00	175.00	24 1/4	10 1/8	16
12	.....	....	...	187.00	265.00	27 1/2	12	19
14	.....	....	...	350.00	.....	32	13 1/2	21

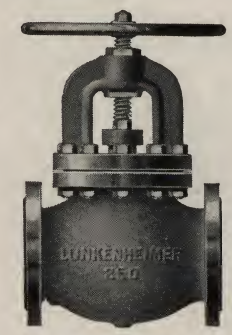
Lunkenheimer Iron Body Globe and Angle Valves

Bronze Mounted—Outside Screw—Flanged Yoke Bonnet

Class 250 { 2 to 5 In.—250 Lb. S.P., 450°F., 500 Lb. W.O.G.
6 to 8 In.—250 Lb. S.P., 450°F.



No. 882, Angle Screwed



No. 884, Globe Flanged

Seating surfaces are regrindable; seat, disc and all other parts are renewable; stuffing box can be repacked when valves are under pressure and full open.

Size In.	Screwed: No. 881 Globe No. 882 Angle Each	End to End In.	Ctr. to End In.	Flanged: No. 884 Globe No. 885 Angle Each	Face to Face In.	Ctr. to Face In.	Diam. Flange In.
2	$26.00	8 3/16	4 1/8	$27.50	10 1/2	5 1/4	6 1/2
2 1/2	33.00	10 5/8	5 3/8	35.00	11 1/2	5 3/4	7 1/2
3	37.00	11 3/4	5 7/8	40.00	12 1/2	6 1/4	8 1/4
3 1/2	42.00	12 3/4	6 3/8	45.00	13 1/4	6 5/8	9
4	46.00	13	6 1/2	50.00	14	7	10
5	.....	....	...	65.00	15 3/4	7 7/8	11
6	.....	....	...	80.00	17 1/2	8 3/4	12 1/2
8	.....	....	...	120.00	21	10 1/2	15

Lunkenheimer Iron Body Swing Check Valves

Bronze Mounted

Class 125 { 125 Lb. S.P. 450° F.
200 Lb. W.O.G.

No. 1789, Screwed

No. 1790, Flanged

Seating surfaces are regrindable and all parts, including the bronze seat and disc are renewable.

Two side plugs are provided which act as bearings for the disc carrier and these also being renewable, the perfect seating of the disc can at all times be maintained.

The valves may be connected in either a horizontal or vertical position. Having a practically straightway flow channel, and the area throughout the body being in excess of that of the connecting pipe, an unobstructed flow is assured.

Size Inches	No. 1789, Screwed Each	End to End Inches	No. 1790, Flanged Each	Face to Face Inches	Diameter Flanges Inches
2	$11.00	8	$13.00	8	6
2 1/2	12.00	8 1/2	14.50	8 1/2	7
3	13.50	9 1/2	17.00	9 1/2	7 1/2
3 1/2	17.50	10 1/2	21.00	10 1/2	8 1/2
4	20.00	11 1/2	24.00	11 1/2	9
5	30.00	13	34.00	13	10
6	36.00	14	41.00	14	11
8	.....	....	75.00	19 1/2	13 1/2
10	.....	....	115.00	24 1/2	16
12	.....	....	168.00	27 1/2	19

Lunkenheimer All-Iron Swing Check Valves

Flanged Cap

Class 125 { 125 Lb. S. P. 450°F.
200 Lb. W. O. G.

No. 1791, Screwed

No. 1792, Flanged

Recommended for handling solutions which attack bronze but not iron.

Swing patterns may be connected in either horizontal or vertical position. The two side bearing plugs can be renewed should they become worn, thus insuring a true guide for the disc at all times.

The seat angle is 6°. Seating surfaces are regrindable.

All parts, including seat and disc, are renewable.

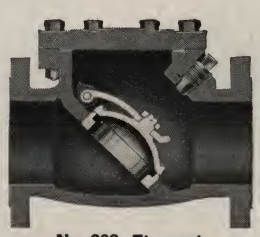
Size Inches	Screwed: No. 1791 Each	End to End Inches	Flanged: No. 1792 Each	Face to Face Inches	Diam. Flange Inches
2	$11.00	8	$13.00	8	6
2 1/2	12.00	8 1/2	14.50	8 1/2	7
3	13.50	9 1/2	17.00	9 1/2	7 1/2
3 1/2	.....	10 1/2	.....	10 1/2	8 1/2
4	20.00	11 1/2	24.00	11 1/2	9

Lunkenheimer Iron Body Swing Check Valves

Bronze Mounted—Flanged Cap

Class 250 { 250 Lb. S.P., 450°F.
500 Lb. W.O.G.

No. 324, Screwed



No. 323, Flanged

Seating surfaces are regrindable and all parts, including the bronze seat ring, are renewable.

Two side plugs are provided which act as bearings for the disc carrier pin and these also being renewable, the perfect seating of the disc can at all times be maintained.

	No. 324, Screwed		No. 323, Flanged		
Size In.	Each	End to End Inches	Each	Face to Face Inches	Diameter Flanges Inches
2	$15.00	7	$17.00	10½	6½
2½	20.00	7⅞	22.00	11½	7½
3	28.00	8⅞	30.00	12½	8¼
3½	36.00	9⅝	38.00	13¼	9
4	41.00	10⅝	44.00	14	10
5	.....	....	57.00	15¾	11
6	.....	....	70.00	17½	12½
8	.....	....	105.00	21	15

No. 432 Lunkenheimer Iron Body Lever Gate Valves

Bronze Mounted

For Steam Pressures Up to 3 Inches, 175 Pounds; 3½ and 4 Inches, 125 Pounds; 5 and 6 Inches, 100 Pounds

The simple and practical ball and socket wedging principle of the disc construction provides positive seating under trying service conditions.

Size Inches	Each	End to End Inches
2	$40.00	5½
2½	56.00	6⅜
3	72.00	6¼
3½	92.00	6¾
4	112.00	7¼
5	132.00	8½
6	160.00	9¼

No. 628 Lunkenheimer Handy Iron Body Gate Valves

Bronze Mounted

Screwed Ends—75 Lb. S.P.

A quick opening valve for handling water, oils, and other classes of liquids and low pressure steam.

Size Inches	Each	End to End Inches
2	$20.00	4¼
2½	32.00	4½
3	40.00	5
3½	56.00	6⅛
4	64.00	6 5/16
5	96.00	7 5/16
6	112.00	8¼
8	240.00	9¾

Lunkenheimer King-Clip Iron Body Gate Valves

Bronze Mounted—Wedge Disc—Inside Screw

Screwed
¼ to 2 Inches: 150 Lb. S.P. at 450°F.
225 Lb. W.O.G.
2½ to 4 Inches: 125 Lb. S.P. at 450°F.
175 Lb. W.O.G.
Flanged
1 to 4 Inches: 125 Lb. S.P. at 450°F.
175 Lb. W.O.G.

This valve gives equally satisfactory results on steam, oil, gas, air, water and gasoline lines.

No. 1640, Screwed

Bronze bushing in bonnet is an original Lunkenheimer feature. It provides a non-corrosive contact with bronze stem, protects stem threads and insures easy operation. The drain channels in bonnet are likewise original with Lunkenheimer.

Valves are repackable under pressure. Sizes ¼ to 3-inch, inclusive, have bronze stuffing box nut; bronze gland provided in sizes 1 to 3-inch; larger sizes have bolted iron gland.

	No. 1640, Screwed		No. 1641, Flanged		
Size Inches	Each	End to End Inches	Each	Face to Face Inches	Diam. Flange Inches
¼	$3.50	1⅞	.....	...	...
⅜	3.50	2 1/16	.....	...	...
½	3.70	2¼	.....	...	...
¾	4.50	2⅝	.....	...	...
1	5.00	2 15/16	$15.00	3 3/16	4¼
1¼	6.00	3 5/16	17.00	3½	4⅝
1½	7.00	3 7/16	18.00	6	5
2	10.00	4 1/16	20.00	7	6
2½	17.00	4⅝	30.00	7½	7
3	21.00	4 15/16	37.00	8	7½
3½	46.00	6 13/16	77.00	8½	8½
4	48.00	6 13/16	88.00	9	9

Lunkenheimer King-Clip Iron Body, Bronze Mounted Gate Valves

Wedge Disc, Quick Operating

No. 1642
Screwed

Applicable on steam, oil, gas, air, water, and gasoline lines.

Thumbscrew at top of stem serves as lock to hold disc at any desired position.

Disc is sharply tapered enabling handling of heavy fluids.

Steel clip, which secures bonnet to body, facilitates dismantling.

Pipe thread length will accommodate both American Standard and A.P.I. line pipe.

Pressure Ratings

Size Inches	Type	S.P. 450° Lb.	W.O.G. Lb.
½ to 2	Screwed	150	225
2½ to 4	Screwed	125	175
1 to 4	Flanged	125	175

	Screwed		Flanged		
Size In.	No. 1642 Each	End to End Inches	No. 1643 Each	Face to Face Inches	Diam. Flanges Inches
½	$7.00	2¼	.....	...	...
¾	7.50	2⅝	.....	...	...
1	8.00	2 15/16	$24.00	3 3/16	4¼
1¼	10.00	3 5/16	26.00	3½	4⅝
1½	12.50	3 7/16	27.00	6	5
2	19.00	4 1/16	29.00	7	6
2½	30.00	4⅝	48.00	7½	7
3	36.00	4 15/16	54.00	8	7½
3½	64.00	6 13/16	94.00	8½	8½
4	66.00	6 13/16	98.00	9	9

Lunkenheimer Iron Body Gate Valves

Bronze Mounted—Non-Rising Stem Inside Screw Flanged Bonnet—Wedge Disc

Class 125 { 125 Lb. S.P., 450°F. / 200 Lb. W.O.G.

No. 1427, Screwed

No. 1428, Flanged

Stuffing box is repackable when valve is under pressure and full open. All parts renewable, including seat rings.

Size Inches	No. 1427, Screwed Each	No. 1427, Screwed End to End Inches	No. 1428, Flanged Each	No. 1428, Flanged Face to Face Inches	No. 1428, Flanged Diam. Flanges Inches
2	$10.00	5¼	$12.00	7	6
2½	11.50	5¾	13.50	7½	7
3	14.00	6 5/16	16.50	8	7½
3½	17.00	6⅝	19.50	8½	8½
4	19.00	7 1/16	23.00	9	9
5	27.50	8	31.50	10	10
6	32.50	8¾	36.50	10½	11
8	.....	...	58.00	11½	13½
10	.....	...	95.00	13	16
12	.....	...	133.00	14	19

Lunkenheimer Iron Body Gate Valves

Bronze Mounted Rising Stem Outside Screw Flanged Bonnet and Yoke—Wedge Disc

Class 125
2 to 12 In.
125 Lb. S.P., 450°F.
200 Lb. W.O.G.
14 to 24 In.
80 Lb. S.P., 450°F.
150 Lb. W.O.G.

All parts renewable including seat rings. Stuffing box repackable when valve is under pressure and full open.

No. 1429, Screwed

No. 1430, Flanged

Size In.	No. 1429, Screwed Each	No. 1429, Screwed End to End Inches	No. 1430, Flanged Each	No. 1430, Flanged Face to Face Inches	No. 1430, Flanged Diam. Flgs. In.
2	$19.00	5¼	$21.00	7	6
2½	20.50	5¾	22.50	7½	7
3	23.50	6 5/16	26.00	8	7½
3½	27.00	6⅝	29.50	8½	8½
4	32.50	7 1/16	36.50	9	9
5	45.00	8	49.00	10	10
6	52.00	8¾	56.00	10½	11
8	.....	...	90.00	11½	13½
10	.....	...	136.00	13	16
12	.....	...	180.00	14	19
14	.....	...	255.00	15	21
16	.....	...	350.00	16	23½
18	.....	...	470.00	17	25
20	.....	...	565.00	18	27½
24	.....	...	775.00	20	32

Lunkenheimer Iron Body Gate Valves

Bronze Mounted—Non-Rising Stem Inside Screw Flanged Bonnet—Wedge Disc

Class 250 { 250 Lb. S.P., 450°F. / 500 Lb. W.O.G.

No. 1433, Screwed

No. 1434, Flanged

All parts renewable, including seat rings. Stuffing box repackable when valve is under pressure and full open.

Disc accurately guided on machined guides. It does not drag over seat—no scoring or marring of seating surfaces.

Size In.	No. 1433, Scrd. Each	No. 1433, Scrd. End to End In.	No. 1434, Flgd. Each	No. 1434, Flgd. Face to Face In.	No. 1434, Flgd. Diam. Flgs. In.	Size In.	No. 1434, Flgd. Each	No. 1434, Flgd. Face to Face Flgd. In.	No. 1434, Flgd. Diam. Flgs. In.
1½	$25.00	5½	$27.50	7½	6⅛	5	$90.00	15	11
2	27.50	6	30.00	8½	6½	6	107.00	15⅞	12½
2½	33.00	6⅝	35.50	9½	7½	8	162.00	16½	15
3	45.00	7¼	48.00	11⅛	8¼	10	258.00	18	17½
3½	57.00	7 15/16	60.00	11⅞	9	12	335.00	19¾	20½
4	60.00	8 9/16	65.00	12	10	..	.....	....	....

Lunkenheimer Iron Body Gate Valves

Bronze Mounted—Rising Stem—Outside Screw—Flanged Bonnet and Yoke—Wedge Disc

Class 250 { 1½ to 12 In.—250 Lb. S.P., 450°F.; 500 Lb. W.O.G. / 14 to 18 In.—200 Lb. S.P., 450°F.; 400 Lb. W.O.G.

No. 1435, Screwed

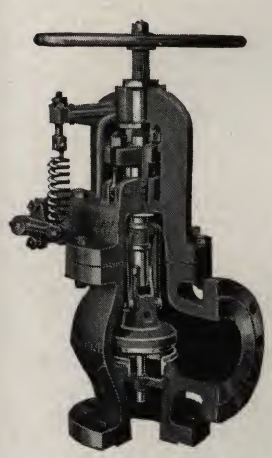
No. 1436, Flanged

All parts renewable; stuffing box repackable when valve is under pressure and full open. Disc accurately guided on machined guides.

Bronze to bronze contacts in yoke, gland and bottom of stuffing box prevent corrosion. No scoring of stem.

Size In.	No. 1435, Scrd. Each	No. 1435, Scrd. End to End Inches	No. 1436, Flanged Each	No. 1436, Flanged Face to Face Inches	No. 1436, Flanged Diam. Flgs. In.	Size In.	No. 1436, Flanged Each	No. 1436, Flanged Face to Face Inches	No. 1436, Flanged Diam. Flgs. In.
1½	$35.50	5½	$38.00	7½	6⅛	6	$131.00	15⅞	12½
2	38.50	6	41.00	8½	6½	8	201.00	16½	15
2½	44.50	6⅝	47.00	9½	7½	10	305.00	18	17½
3	58.00	7¼	61.00	11⅛	8¼	12	420.00	19¾	20½
3½	72.00	7 15/16	75.00	11⅞	9	14	540.00	22½	23
4	78.00	8 9/16	83.00	12	10	16	800.00	24	25½
5	.....	...	113.00	15	11	18	1030.00	26	28

Lunkenheimer Iron Body Safety Non-Return Valves



No. 1408, Angle

Bronze Mounted
Outside Screw
Flanged Yoke Bonnet

Flanged Ends
250 Lb. S.P., 450°F.

These valves automatically close and instantly cut out a boiler connected in battery when the pressure within the boiler suddenly drops below that of the header.

They may be installed with the valve stem in either a vertical or horizontal plane.

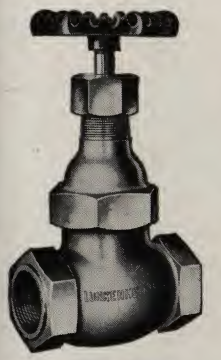
The seating surfaces are regrindable and all parts, including the seat and disc, are renewable.

Size Inches	No. 1407 Globe No. 1408 Angle Each	Face to Face Inches	Center to Face Inches	Diam. Flanges Inches
3	$50.00	12½	6¼	8¼
3½	56.00	13¼	6⅝	9
4	60.00	14	7	10
5	80.00	15¾	7⅞	11
6	95.00	17½	8¾	12½
8	145.00	21	10½	15
10	240.00	24½	12¼	17½

Lunkenheimer Steel Globe and Angle Valves

Full-Way and Throttling Types—Screwed Bonnet—Inside Screw with Bonnet-Thread-Bushing

600 Lb. S.P. 750°F.—1000 Lb. W.O.G. 100°F.



No. 1720, Globe Screwed

Bonnet-thread-bushing is a separate part made of an alloy exceptionally resistive to wear at high temperature.

It provides an excellent bearing for the stem-thread and reduces wear to a minimum with resultant longer service life.

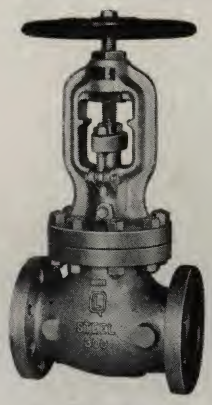
Disc and seat ring are made of stainless steel, heat-treated to provide great hardness, and ground to form a pressure-tight seat.

	Screwed				Flanged			
Size In.	Full-Way No. 1720 Globe No. 1721 Angle Each	Throttling No. 1722 Globe No. 1723 Angle Each	End to End Inches	Center to End Inches	Full-Way No. 1724 Globe No. 1725 Angle Each	Throttling No. 1726 Globe No. 1727 Angle Each	Face to Face over ¼-In. Raised Faces Inches	Center to ¼-In. Raised Face Inches
¼	$16.00	.....	3	1½	.....	.....	....	...
⅜	16.00	.....	3	1½	.....	.....	....	...
½	23.00	$23.00	3¼	1 9/16	$36.00	$36.00	6½	3¼
¾	29.00	29.00	3¾	1⅞	43.00	43.00	7½	3¾
1	36.00	36.00	4½	2 7/32	52.00	52.00	8½	4¼
1¼	46.00	46.00	5⅛	2 9/16	65.00	65.00	9	4½
1½	59.00	59.00	5 9/16	2 27/32	78.00	78.00	9½	4¾
2	75.00	75.00	6 13/16	3 7/16	97.00	97.00	11½	5¾

Lunkenheimer Steel Globe and Angle Valves

Outside Screw—Flanged Yoke Bonnet

Flanged Ends
Carbon Steel
300 Lb. S.P., 750°F.—500 Lb. W.O.G., 100°F.
Carbon Molybdenum Steel
300 Lb. S.P., 900°F.—600 Lb. W.O.G., 100°F.



No. 1600, Globe

This pattern includes seat rings rectangular in cross section, and cooling chamber with vent plug.

Regularly furnished with high content nickel alloy seat rings and stainless steel discs or disc rings and stems for steam, water and gas service; and with stainless steel seat rings, discs or disc rings and stems for hot oil and general refinery service.

Valves regularly furnished with plain bearing yoke.

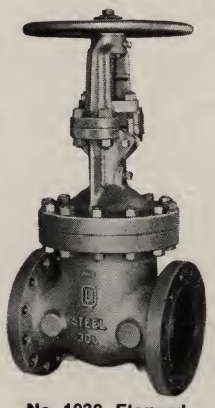
Prices include drilling and spot facing.

Also available with welding ends in all sizes and with screwed ends in sizes 2 to 4.

	No. 1600, Globe		No. 1601, Angle		
Size Inches	Each	‡Face to Face Inches	Each	‡Center to Face Inches	Diameter Flanges Inches
2	$175.00	10½	$175.00	5¼	6½
2½	200.00	11½	200.00	5¾	7½
3	230.00	12½	230.00	6¼	8¼
3½	270.00	13¼	270.00	6⅝	9
4	310.00	14	310.00	7	10
5	420.00	15¾	420.00	7⅞	11
6	520.00	17½	520.00	8¾	12½
*8	920.00	22	920.00	10½	15
†10	1400.00	25⅜	1400.00	12¼	17½

*With roller bearing yoke.
†With roller bearing yoke geared.
‡Over 1/16-inch raised faces.

Lunkenheimer Steel Gate Valves



No. 1938, Flanged

Outside Screw and Yoke Bolted Bonnet

Carbon Steel
300 Lb. S.P. 750°F.
500 Lb. W.O.G. 100°F.

Carbon Molybdenum Steel
300 Lb. S.P. 900°F.
600 Lb. W.O.G. 100°F.

Design includes circular neck section on the body.

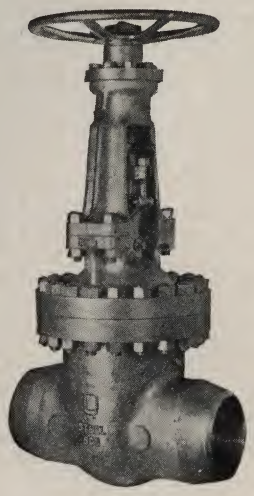
Flanges are faced, drilled, and spot-faced.

Also available with welding ends; prices on application.

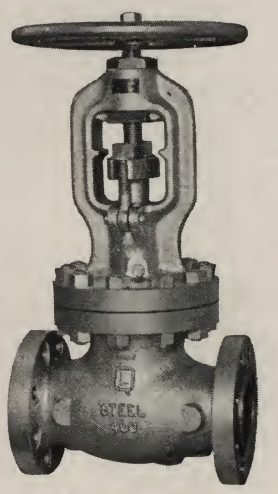
	Screwed		Flanged			
Size Inches	No. 1869 Each	End to End Inches	No. 1938 Each	No. 1939 with By-Pass Each	Face to Face over 1/16-In. Raised Faces Inches	Diam. Flange Inches
1½	$138.00	6½	$145.00	.....	7½	6⅛
2	156.00	7½	165.00	.....	8½	6½
2½	185.00	8⅜	195.00	.....	9½	7½
3	209.00	9	220.00	.....	11⅛	8¼
3½	250.00	10	260.00	.....	11⅞	9
4	270.00	10½	285.00	.....	12	10
5	.....	....	410.00	$568.00	15	11
6	.....	....	505.00	663.00	15⅞	12½
8	.....	....	745.00	903.00	16½	15
10	.....	....	1040.00	1216.00	18	17½
12	.....	....	1400.00	1576.00	19¾	20½
14	.....	....	1990.00	2200.00	30	23
16	.....	....	2550.00	2760.00	33	25½
18	.....	....	3310.00	3565.00	36	28
20	.....	....	4335.00	4590.00	39	30½
24	.....	....	6375.00	6687.00	45	36

Lunkenheimer Steel Valves

150 to 1500 Lb. S.P.



No. 1500
600 Lb. S.P. Gate



No. 1465
400 Lb. S.P. Globe

Lunkenheimer Steel Valves are made in accordance with the American Standards Association.

They are available in Gate, Globe, Check, Non-Return and Blow-Off patterns in a variety of trim and body materials for all prevailing pressures and temperatures.

Constructed for flanged or welded piping and equipped with motor control or gearing.

Prices upon application.

Lunkenheimer Valves for Marine Service

Regular Lunkenheimer Valves are approved for Marine Service. In the patterns and sizes commonly used by the Marine trade, all Lunkenheimer Valves regularly receive the required Marine Service tests and comply with the Rules of the Bureau of Marine Inspection and Navigation in designs for Class I and Class II piping.

★

Phone or write for a complete listing of valves for Marine Service—Bulletin M-1.

No. 431 Chase Bronze Globe Valves

Composition or Brass Disc

Copper to Copper

125 Pounds Steam Working Pressure
250 Pounds Water Working Pressure

Nominal Size Inches	Actual O.D. Inches	No.	Each
3/8	1/2	2347	$2.15
1/2	5/8	2348	2.45
3/4	7/8	2349	3.05
1	1 1/8	2350	3.95
1 1/4	1 3/8	2351	5.55
1 1/2	1 5/8	2352	6.70
2	2 1/8	2353	9.75

No. 485 Chase Bronze Swing Check Valves

For Horizontal or Vertical Lines
Brass Seat—Brass Disc—Polished Cap

Copper to Copper
125 Pounds Steam Working Pressure
250 Pounds Water Working Pressure

No.	Nominal Size In.	Actual O.D. Size In.	Each
3167	3/8	1/2	$2.35
2972	1/2	5/8	2.35
2973	3/4	7/8	2.95
2974	1	1 1/8	3.90
2975	1 1/4	1 3/8	4.80
2976	1 1/2	1 5/8	6.25
2977	2	2 1/8	8.95

No. 429 Chase Bronze Gate Valves

Without Waste

Rising Stem—Double Disc

Copper to Copper

125 Pounds Steam Working Pressure
250 Pounds Water Working Pressure

Nominal Size Inches	Actual O.D. Inches	No.	Each
3/8	1/2	2077	$2.60
1/2	5/8	2078	2.65
3/4	7/8	2079	3.40
1	1 1/8	2080	4.20
1 1/4	1 3/8	2081	5.30
1 1/2	1 5/8	2082	6.85
2	2 1/8	2083	9.65
2 1/2	2 5/8	3165	18.75
3	3 1/8	3166	26.55

No. 430 Chase Bronze Gate Valves

Copper to Copper
150 Pounds Steam Working Pressure
300 Pounds Water Working Pressure

Nominal Size Inches	Actual O.D. Inches	No.	Each
3/8	1/2	2701	$2.90
1/2	5/8	2702	2.95
3/4	7/8	2703	3.55
1	1 1/8	2704	4.65
1 1/4	1 3/8	2705	6.15
1 1/2	1 5/8	2706	8.30
2	2 1/8	2707	12.10
2 1/2	2 5/8	2708	20.90
3	3 1/8	2709	29.50
3 1/2	3 5/8	2710	40.75
4	4 1/8	2711	48.35

No. 432 Chase Bronze Gate Valves

Outside Screw and Yoke

Copper to Copper

200 Pounds Steam Working Pressure

400 Pounds Water Working Pressure

Nominal Size Inches	Actual O.D. Inches	No.	Each
3/4	7/8	2339	$14.75
1	1 1/8	2340	15.95
1 1/4	1 3/8	2341	18.45
1 1/2	1 5/8	2342	23.10
2	2 1/8	2343	31.30
2 1/2	2 5/8	2344	47.95
3	3 1/8	2345	60.35
4	4 1/8	2346	85.20

No. 1 Line O-B Bronze Globe and Angle Valves

Brass Discs

Screwed Ends

For 125 Pounds Steam Working Pressure

Globe

Angle

Scientifically designed to insure correct distribution of metal. Each individual part has been developed to best serve the purpose for which it is intended.

Made of high grade steam bronze. Uniformity of mixture is assured through the use of only new metals and the supervision of experienced metallurgical chemists.

Malleable iron, non-heating, hand wheel is green enameled. Trimmings are nicely finished, body is rough.

Screwed ends, threaded right hand for both inlet and outlet.

Size In.	Globe Each	Angle Each	Size In.	Globe Each	Angle Each
1/8	$1.80	$1.80	1 1/4	$5.00	$5.00
1/4	1.80	1.80	1 1/2	7.00	7.00
3/8	1.90	1.90	2	10.60	10.60
1/2	2.40	2.40	2 1/2	20.00	20.00
3/4	3.00	3.00	3	27.50	27.50
1	3.60	3.60	...	.....	.....

No. 10 Line O-B Bronze Globe and Angle Valves

For 150 Pounds Steam Working Pressure

Composition Disc

Globe, Screwed

Angle, Screwed

The O-B Disc Valve is made of special high grade steam bronze. It is supplied with non-heating malleable iron hand wheel, enameled green and with gland in the stuffing box. It has screwed ends, threaded right hand both inlet and outlet. All threads conform to Brigg's standard wrought iron pipe dimensions.

Composition disc is made of high grade materials and fully guaranteed for steam service; it is of a composition which by every known means has been shown suitable for the most exacting and lasting service. Discs suitable for cold water, air, gas, or other special service, will be furnished if desired.

Valves can be repacked when under full pressure if opened wide.

Size In.	Screwed Price Each	Size In.	Screwed Price Each	Size In.	Screwed Price Each
1/8	$2.40	3/4	$4.70	2	$19.00
1/4	2.60	1	6.60	2 1/2	34.00
3/8	3.00	1 1/4	8.60	3	48.00
1/2	3.60	1 1/2	12.00	...	.....

No. 1 Line O-B Bronze Check Valves

Screwed Ends

For 125 Pounds Steam Working Pressure

Horizontal Brass Disc

Size In.	Each	Size In.	Each
1/8	$1.60	1 1/4	$4.50
1/4	1.60	1 1/2	6.30
3/8	1.75	2	9.50
1/2	2.16	2 1/2	18.00
3/4	2.75	3	25.00
1	3.20	...	.....

Vertical Brass Disc

Size In.	Each	Size In.	Each
1/4	$1.80	1 1/4	$5.00
3/8	1.90	1 1/2	7.00
1/2	2.40	2	10.60
3/4	3.00	2 1/2	20.00
1	3.60	3	27.50

Swing Brass Disc

Size In.	Each	Size In.	Each
1/4	$4.50	*1 1/4	$7.30
3/8	4.50	*1 1/2	9.50
*1/2	4.80	*2	13.50
*3/4	5.40	2 1/2	30.00
*1	5.60	3	45.50

*These sizes available with leather disc.

No. 2 Line O-B Bronze Swing Check Valves

Horizontal and Vertical Brass or Leather Disc

Screwed Ends

For 100 Pounds Steam Working Pressure

Size, In.	Each	Size, In.	Each
1/4	$1.65	1	$2.40
3/8	1.65	1 1/4	2.85
1/2	1.75	1 1/2	3.60
3/4	2.05	2	5.20

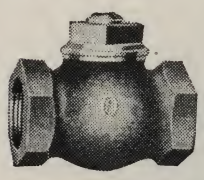
No. 2 Line O-B Bronze Horizontal Check Valves

Brass Disc

For low pressure service. Made of high grade steam bronze.

Screwed ends, threaded right hand for both inlet and outlet.

All threads conform to Brigg's standard wrought iron pipe dimensions.



Size Inches	Each	Size Inches	Each
1/8	$.75	1 1/4	$1.90
1/4	.75	1 1/2	2.70
3/8	.80	2	4.00
1/2	1.00	2 1/2	8.00
3/4	1.25	3	14.00
1	1.50	...	.....

No. 2 Line O-B Bronze Vertical Check Valves

Brass Disc

For low pressure service. Made of high grade steam bronze.

Screwed ends, threaded right hand for both inlet and outlet.

All threads conform to Brigg's standard wrought iron pipe dimensions.

Size.....in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
No. 2...ea.	$.85	.90	1.10	1.35	1.60	2.30	3.25	5.00

No. 10 Line O-B Bronze Horizontal Check Valves

Composition Disc—Screwed Ends
For 150 Pounds Working Steam Pressure

Size In.	Each	Size In.	Each	Size In.	Each
1/8	$2.60	3/4	$4.20	2	$16.00
1/4	2.60	1	5.80	2 1/2	30.00
3/8	2.90	1 1/4	8.00	3	46.00
1/2	3.20	1 1/2	11.00	...	.....

No. 20 Line O-B Bronze Gate Valves

With Flexitite Disc—Patented
For 125 Pounds Steam Working Pressure

This valve shuts off tight under the most severe service conditions. Flexitite disc is of a design which combines a slight flexibility with sturdy 1-piece construction. Hand wheel is malleable iron, non-heating type. Has packing gland. Can be packed under pressure. Valve is well proportioned, of sturdy design and pleasing appearance.

Size Inches	Screwed Price, Each	Size Inches	Screwed Price, Each
1/8	$2.40	1 1/4	$6.00
1/4	2.40	1 1/2	8.00
3/8	2.40	2	11.00
1/2	2.60	2 1/2	19.00
3/4	3.30	3	28.00
1	4.40	...	.....

No. 22 Line O-B Bronze Gate Valves

Non-Rising Stem—Patented

For 150 Pounds Working Steam Pressure

The No. 22 Line Standard Gate Valve is equipped with the O-B Flexitite Disc. This valve is especially designed and proportioned for working steam pressures up to 150 pounds. It shuts off tight on steam, water, air, gas, oil, and vacuum systems.

Non-rising stem.

Size	1/4	3/8	1/2	3/4	1
No. 22.....each	$3.20	3.20	3.60	4.20	5.80

Size	1 1/4	1 1/2	2	2 1/2	3
No. 22.....each	$8.00	10.00	16.00	26.00	38.00

No. 25 Line O-B Bronze Gate Valves

With Flexitite Disc—Patented
Screwed Ends
For 100 Pounds Steam Working Pressure

The body and bonnet are of a design admitted to be the best pressure resisting construction yet employed in valve manufacture. The natural strength and rigidity of the body is reinforced by the cast ribs between the neck of the body and the pipe ends.

Flexitite disc is of a design which combines a slight flexibility with sturdy 1-piece construction. Handwheel is malleable iron, non-heating type. Can be packed under pressure.

Size Inches	Each	Size Inches	Each
1/4	$1.20	1 1/4	$2.65
3/8	1.20	1 1/2	3.55
1/2	1.30	2	5.00
3/4	1.50	2 1/2	10.50
1	2.00	3	15.30

AMMONIA FITTINGS

AMMONIA VALVES

For full information about these specialized lines, we invite your inquiries and orders.

Vogt Drop Forged Steel Globe Valves

For Steam Service

Round Bolted Bonnet—Bolted Gland—Gasket Joint
Outside Screw and Yoke—Renewable Seat
Loose Disc—Cone Type

Screwed Ends

Carbon Steel: 600 Lb. Pressure at 900°F.
2000 Lb. Cold Non-Shock Pressure

Carbon Molybdenum Steel: 600 Lb. Pressure at 950°F.
2500 Lb. Cold Non-Shock Pressure

Stainless steel or other alloy trimmings are recommended for corrosive services. Stellite seating surfaces are recommended for severe steam service; prices on request.

Flat gasket is between body and bonnet; ring gasket can be furnished if required.

Stuffing box can be repacked under pressure when valve is fully open. Stem threads not exposed to the service temperature.

Parts subject to wear are easily reground or replaced.

Needle point stems can be furnished; prices on request. Socket and butt weld ends can be furnished; prices on request.

Size In.	11 1/2-13% Chrome Stainless Steel Trimmings No.	Each	Monel Steel Trimmings No.	Each	Nitralloy Trimmings No.	Each	End to End In.
1/2	9403	$21.25	9333	$21.25	9423	$21.25	3 5/8
3/4	9404	23.50	9334	23.50	9424	23.50	4 1/2
1	9405	26.00	9335	26.00	9425	26.00	5
1 1/4	9406	32.25	9336	32.25	9426	32.25	6 1/2
1 1/2	9407	39.50	9337	39.50	9427	39.50	7 1/4
2	9408	49.25	9338	49.25	9428	49.25	9
2 1/2	9409	68.00	9339	68.00	9429	68.00	10 1/4
3	9410	.....	9340	.....	9430	.....	13
4	9411	.....	9341	.....	4931	.....	16 1/2

Vogt Drop Forged Steel Globe Valves

For 600 Pounds Oil Pressure

Union Bonnet—Ground Joint—Outside Screw and Yoke
Renewable Seat—Loose Disc
Steel, Monel Metal and Stainless Steel Trimmings

Screwed Ends
Working Pressure 600 Pounds at 900°F.
Non-Shock Cold Working Pressure 2000 Pounds

This type of valve is recommended for non-corrosive oils and other non-corrosive fluids (if steel trimmed) at the high pressures and high temperatures indicated above. Valve is furnished stainless steel trimmed when required for corrosive oils, etc.

A ground joint instead of a gasket is between body and bonnet. Valve can be repacked under pressure. Seat and disc are very easily reground or replaced.

The stem thread is not exposed to the service temperature.

Size In.	Trimmings: Steel No.	Steel Each	Monel Metal No.	Monel Metal Each	11 1/2-13% Chrome Stainless Steel No.	11 1/2-13% Chrome Stainless Steel Each	18-8 Stainless Steel No.	18-8 Stainless Steel Each	End to End In.	Wt. Lb.
1/4	1421	$11.00	1461	$12.00	1491	$12.00	1491-F8	$12.00	3 1/8	4 1/4
3/8	1422	11.00	1462	12.00	1492	12.00	1492-F8	12.00	3 1/8	4 1/4
1/2	1423	13.75	1463	14.60	1493	14.60	1493-F8	14.60	3 5/8	6
3/4	1424	15.70	1464	16.70	1494	16.70	1494-F8	16.70	4 3/8	9 1/2
1	1425	17.20	1465	19.20	1495	19.20	1495-F8	19.20	5	13 1/2
1 1/4	1426	25.00	1466	27.50	1496	27.50	1496-F8	27.50	6	21 1/2
1 1/2	1427	32.50	1467	36.70	1497	36.70	1497-F8	36.70	6 3/4	35 1/2
2	1428	42.70	1468	49.20	1498	49.20	1498-F8	49.20	8 1/4	50

Vogt Drop Forged Steel Globe Valves

For 600 Pounds Oil Pressure

Union Bonnet—Ground Joint—Inside Screw Stem—Renewable Seat—Loose Disc
Steel, Monel Metal and Stainless Steel Trimmings

Screwed Ends
Working Pressure 600 Pounds at 800°F.
Non-Shock Cold Working Pressure 2000 Pounds

This type of valve is recommended for non-corrosive oils and other non-corrosive fluids (if steel trimmed) at the high pressures and high temperatures indicated above. Valve is furnished stainless steel trimmed when required for corrosive oils, etc.

A ground joint instead of a gasket is between body and bonnet.

Valve can be repacked under pressure.

Seat and disc are very easily reground or replaced.

Size In.	Trimmings: Steel No.	Steel Each	Monel Metal No.	Monel Metal Each	11½-13% Chrome Stainless Steel No.	11½-13% Chrome Stainless Steel Each	18-8 Stainless Steel No.	18-8 Stainless Steel Each	End to End In.	Wt. Lb.
¼	3011	$10.00	3041	$10.80	3071	$10.80	3071-F8	$10.80	3⅛	4¼
⅜	3012	10.00	3042	10.80	3072	10.80	3072-F8	10.80	3⅛	4¼
½	3013	12.50	3043	13.35	3073	13.35	3073-F8	13.35	3⅝	6¼
¾	3014	14.00	3044	15.00	3074	15.00	3074-F8	15.00	4⅜	9
1	3015	15.50	3045	17.50	3075	17.50	3075-F8	17.50	5	13½
1¼	3016	22.50	3046	25.00	3076	25.00	3076-F8	25.00	6	21
1½	3017	29.00	3047	33.35	3077	33.35	3077-F8	33.35	6¾	32
2	3018	38.50	3048	45.00	3078	45.00	3078-F8	45.00	8¼	46

Vogt Drop Forged Steel Globe Valves

For Water and Oil Service
Screw Bonnet—Gasket Joint—Inside Screw Stem
Renewable Seat—Loose Disc

Screwed Ends

Carbon Steel: 3000 Lb. Non-Shock Pressure at Temperatures Not to Exceed 450°F.
Carbon Steel: 6000 Lb. Non-Shock Pressure at Temperatures Not to Exceed 450°F.

No. 1871

No. 3991

With 11½–13 per cent chrome stainless steel trimmings.

Size In.	3000-Pound Plug Type No.	Plug Type Each	*Needle Point Type No.	*Needle Point Type Each	End to End In.	6000-Pound Plug Type No.	Plug Type Each	*Needle Point Type No.	*Needle Point Type Each	End to End In.
¼	*1871	$14.50	1591	$14.50	3⅛	*3991	$17.25	3851	$17.25	3⅝
⅜	*1872	14.50	1592	14.50	3⅛	*3992	17.25	3852	17.25	3⅝
½	*1873	17.25	1593	17.25	3⅝	*3993	18.75	3853	18.75	4⅜
¾	1874	18.75	1594	18.75	4⅜	3994	20.75	3854	20.75	5
1	1875	20.75	1595	20.75	5	3995	28.25	3855	28.25	6
1¼	1876	27.00	1596	27.00	6	3996	39.50	3856	39.50	6¾
1½	1877	36.00	1597	36.00	6¾	3997	55.00	3857	55.00	8¼
2	1878	54.00	1598	54.00	8¼	3998	72.00	3858	72.00	9½

*With slotted disc.

Vogt Drop Forged Steel Globe Valves

For Water and Oil Service
Screw Bonnet—Gasket Joint—Inside Screw Stem
Renewable Seat—One-Piece Stem—Plug Type

Screwed Ends

Used for oil or water hydraulic services. Stainless steel or other alloy trimmings are recommended for corrosive services.

A flat gasket is between male and female bonnet joint.

Stuffing box can be repacked under pressure when valve is fully open.

Parts subject to wear are easily reground or replaced.

Carbon Steel: 1500 Pounds Non-Shock Pressure at Temperatures Not to Exceed 450°F.

Size In.	11½-13% Chrome Stainless Steel Trimmings No.	Trimmings Each	Monel Metal Trimmings No.	Monel Metal Trimmings Each	Steel Trimmings No.	Steel Trimmings Each	End to End In.
¼	1651	$10.00	1621	$10.00	1631	$9.00	3⅛
⅜	1652	10.00	1622	10.00	1632	9.00	3⅛
½	1653	12.50	1623	12.50	1633	11.00	3⅝
¾	1654	13.50	1624	13.50	1634	12.00	4⅜
1	1655	15.00	1625	15.00	1635	13.50	5
1¼	1656	20.00	1626	20.00	1636	18.00	6
1½	1657	26.50	1627	26.50	1637	23.00	6¾
2	1658	40.00	1628	40.00	1638	35.00	8¼

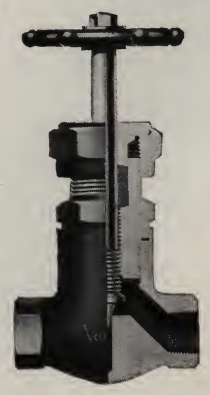
Carbon Steel: 3000 Pounds Non-Shock Pressure at Temperatures Not to Exceed 450°F.

¼	1841	$11.50	1831	$11.50	....	.....	3⅛
⅜	1842	11.50	1832	11.50	....	.....	3⅛
½	1843	13.75	1833	13.75	....	.....	3⅝
¾	1844	15.00	1834	15.00	....	.....	4⅜
1	1845	16.50	1835	16.50	....	.....	5
1¼	1846	21.50	1836	21.50	....	.....	6
1½	1847	28.75	1837	28.75	....	.....	6¾
2	1848	43.25	1838	43.25	....	.....	8¼

Carbon Steel: 6000 Pounds Non-Shock Pressure at Temperatures Not to Exceed 450°F.

¼	3981	$13.75	3941	$13.75	....	.....	3⅝
⅜	3982	13.75	3942	13.75	....	.....	3⅝
½	3983	15.00	3943	15.00	....	.....	4⅜
¾	3984	16.50	3944	16.50	....	.....	5
1	3985	22.50	3945	22.50	....	.....	6
1¼	3986	31.50	3946	31.50	....	.....	6¾
1½	3987	44.00	3947	44.00	....	.....	8¼
2	3988	59.00	3948	59.00	....	.....	9½

Vogt Drop-Forged Steel Globe Valves



Screw Ends, Screw Bonnet, Inside Screw Stem, Integral Seat, Needle Point Stem, Steel Trimmings

Size In.	For Working Pressure 1500 Lbs. At 450° F. No.	1500 Lbs. Each	3000 Lbs. At 450° F. No.	3000 Lbs. Each
¼	2541	$7.50	1341	$8.00
⅜	2542	7.50	1342	8.00
½	2543	8.50	1343	9.00
¾	2544	9.50	1344	10.00
1	2545	10.50	1345	11.25
1¼	2546	13.00	1346	14.50
1½	2547	20.00	1347	22.25
2	2548	30.00	1348	33.25

Vogt Drop Forged Steel Angle Valves

For Water and Oil Service

Screw Bonnet—Gasket Joint—Inside Screw Stem
Renewable Seat—One-Piece Stem—Plug Type

Screwed Ends

Used for oil or water hydraulic services.

Stainless steel or other alloy trimmings are recommended for corrosive services.

A flat gasket is between male and female bonnet joint.

Stuffing box can be repacked under pressure when valve is fully open.

Parts subject to wear are easily reground or replaced.

Carbon Steel: 1500 Pounds Non-Shock Pressure at Temperatures Not to Exceed 450°F.

Size In.	11½–13% Chrome Stainless Steel Trimmings No.	Each	Monel Metal Trimmings No.	Each	Steel Trimmings No.	Each	Ctr. to End In.
¼	1671	$10.00	1641	$10.00	1611	$9.00	1 9/16
⅜	1672	10.00	1642	10.00	1612	9.00	1 9/16
½	1673	12.50	1643	12.50	1613	11.00	1⅞
¾	1674	13.50	1644	13.50	1614	12.00	2 3/16
1	1675	15.00	1645	15.00	1615	13.50	2½
1¼	1676	20.00	1646	20.00	1616	18.00	3
1½	1677	25.00	1647	25.00	1617	21.00	3⅜
2	1678	35.00	1648	35.00	1618	29.00	4⅛

Carbon Steel: 3000 Pounds Non-Shock Pressure at Temperatures Not to Exceed 450°F.

¼	2831	$11.50	2811	$11.50	....	.....	1 9/16
⅜	2832	11.50	2812	11.50	....	.....	1 9/16
½	2833	13.75	2813	13.75	....	.....	1⅞
¾	2834	15.00	2814	15.00	....	.....	2 3/16
1	2835	16.50	2815	16.50	....	.....	2½
1¼	2836	21.50	2816	21.50	....	.....	3
1½	2837	27.25	2817	27.25	....	.....	3⅜
2	2838	38.25	2818	38.25	....	.....	4⅛

Carbon Steel: 6000 Pounds Non-Shock Pressure at Temperatures Not to Exceed 450°F.

¼	2081	$13.75	2051	$13.75	....	.....	1⅞
⅜	2082	13.75	2052	13.75	....	.....	1⅞
½	2083	15.00	2053	15.00	....	.....	2 3/16
¾	2084	16.50	2054	16.50	....	.....	2½
1	2085	22.50	2055	22.50	....	.....	3
1¼	2086	27.50	2056	27.50	....	.....	3⅜
1½	2087	38.50	2057	38.50	....	.....	4⅛

Vogt Drop Forged Steel Angle Check Valves

Screw Bonnet—Gasket Joint—Integral Seat

Screwed Ends
1500 Pounds Cold Working Pressure

No.	Each	Size Inches	Center to End Inches
2520	$7.00	¼	1 9/16
2521	7.00	⅜	1 9/16
2522	8.00	½	1⅞
2523	8.50	¾	2 3/16
2524	9.50	1	2½
2525	12.00	1¼	3
2526	14.00	1½	3⅜
2527	21.00	2	4⅛

Vogt Drop Forged Steel Check Valves

Horizontal

For Steam and Oil Service

Union Bonnet—Gasket Joint—Renewable Seat
Piston and Ball Check

Screwed Ends
Carbon Steel: 600 Lb. Pressure at 900°F.
2000 Lb. Cold Non-Shock Pressure
Carbon Molybdenum Steel: 600 Lb. Pressure at 950°F.
2500 Lb. Cold Non-Shock Pressure

Stainless steel or other alloy trimmings are recommended for corrosive services.

18–8 stainless steel trimmings can be furnished; prices on request.

Flat gasket is between male and female bonnet joint.

Parts subject to wear are easily reground or replaced.

Socket and butt weld ends can be furnished; prices on request.

Size In.	Piston Check: 11½–13% Chrome Stainless Steel Trimmings No.	Each	Monel Metal Trimmings No.	Each	Steel Trimmings No.	Each	Ball Check: 11½–13% Chrome Stainless Steel Trimmings No.	Each	End to End In.
¼	9091	$9.75	8991	$9.75	8891	$9.00	B-9091	$9.75	3⅛
⅜	9092	9.75	8992	9.75	8892	9.00	B-9092	9.75	3⅛
½	9093	12.00	8993	12.00	8893	11.25	B-9093	12.00	3⅝
¾	9094	13.50	8994	13.50	8894	12.75	B-9094	13.50	4⅜
1	9095	15.75	8995	15.75	8895	14.00	B-9095	15.75	5
1¼	9096	22.50	8996	22.50	8896	20.25	B-9096	22.50	6
1½	9097	30.00	8997	30.00	8897	26.25	B-9097	30.00	6¾
2	9098	40.50	8998	40.50	8898	34.75	B-9098	40.50	8¼

Vogt Drop Forged Steel Check Valves

Horizontal

For Steam and Oil Service

Round Bolted Bonnet—Gasket Joint
Piston and Ball Check—Renewable Seat

Screwed Ends
Carbon Steel: 600 Lb. Pressure at 900°F.
2000 Lb. Cold Non-Shock Pressure
Carbon Molybdenum Steel: 600 Lb. Pressure at 950°F.
2500 Lb. Cold Non-Shock Pressure

Recommended for corrosive services.

Furnished with 11½–13 per cent chrome stainless steel trimmings; 18–8 stainless steel trimmings can be furnished; prices on request.

A flat gasket is between male and female bonnet joint.

Parts subject to wear are easily reground or replaced.

Socket and butt weld ends can be furnished; prices on request.

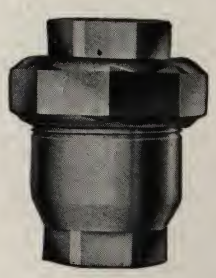
Size Inches	With Piston Check No.	Each	With Ball Check No.	Each	End to End Inches
½	6083	$18.00	B-6083	$18.00	3⅝
¾	6084	19.75	B-6084	19.75	4½
1	6085	21.75	B-6085	21.75	5
1¼	6086	26.25	B-6086	26.25	6½
1½	6087	31.75	B-6087	31.75	7¼
2	6088	39.25	B-6088	39.25	9
2½	6089	54.25	B-6089	54.25	10¼
3	6090	*	B-6090	*	13
4	6091	*	B-6091	*	16½

*Prices on request.

Vogt Drop Forged Steel Combination Horizontal and Vertical Check Valves

For 600 Pounds Service
Screw Ends, Union Bonnet, Ground Joint, Integral Seat, Ball Check, Integral Bonnet Guides

Working Pressure, 600 Pounds at 900° F.



This type valve is recommended for non-corrosive oils and other non-corrosive fluids (if steel trimmed).

Valve is furnished stainless steel trimmed when required for corrosive oils, etc.

A ground joint is between body and bonnet.

Seat is integral with body.

Bonnet, bonnet nut and body are made of carbon steel; ball check is made of carbon steel or stainless steel.

Size In.	Trimmings Steel No.	Trimmings Steel Each	Trimmings Stainless Steel No.	Trimmings Stainless Steel Each	Face to Face In.	Wt. Lbs.
1/2	4803	$9.00	4853	$11.00	3 1/4	2
3/4	4804	10.00	4854	12.00	3 11/16	3
1	4805	10.75	4855	13.00	5 1/8	5 1/4
1 1/4	4806	13.50	4856	16.25	5 3/8	6 1/2
1 1/2	4807	20.50	4857	24.75	5 1/2	9 1/2
2	4808	28.00	4858	33.75	6 1/2	14 1/2

Vogt Drop Forged Steel Gate Valves

For General Gate Valve Service

Union Bonnet—Ground Joint—Inside Screw Stem
Renewable Seat Rings—Solid Wedge—Slotted Type

Screwed Ends
Carbon Steel: 800 Pounds Pressure at 750°F.
1500 Pounds Cold Non-Shock Pressure
All 18-8 Stainless Steel: Ratings on Application; Higher than for Carbon Steel

Designed for general gate valve service, meter and gauge lines, drip and drain lines, etc.

Where internal or external corrosion is very severe the all 18-8 stainless steel valve is recommended. Where external corrosion only is to be considered, stainless steel bonnets and other externally threaded parts can be furnished on steel bodies; prices on request.

Seat rings are rolled in body, and can be easily renewed. Parts subject to wear are easily replaced.

Ground joint is between the body and bonnet.

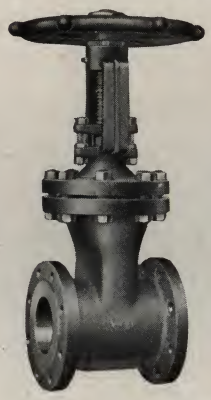
Size In.	18-8 Stainless Steel Trimmings No.	18-8 Stainless Steel Trimmings Each	11½-13% Chrome Stainless Steel Trimmings No.	11½-13% Chrome Stainless Steel Trimmings Each	All 18-8 Stainless Steel No.	All 18-8 Stainless Steel Each	End to End In.
1/4	9851-F8	$6.00	9851	$6.00	9751	$16.50	1 7/8
3/8	9852-F8	6.50	9852	6.50	9752	18.00	2 3/8
1/2	9853-F8	8.00	9853	8.00	9753	21.00	2 3/4
3/4	9854-F8	11.00	9854	11.00	9754	25.00	3 3/8
1	9855-F8	14.50	9855	14.50	9755	32.00	4
1 1/4	9856-F8	19.00	9856	19.00	9756	44.00	4 3/4
1 1/2	9857-F8	24.50	9857	24.50	9757	50.00	5 1/2
2	9858-F8	34.00	9858	34.00	9758	60.00	6 1/4

Vogt Drop Forged Steel Gate Valves

Flanges Forged Integral—Round Bolted Bonnet
Bolted Gland—Outside Screw and Yoke
Renewable Seat Rings—Solid Wedge—Slotted Type
Rising Stem

Flanged Ends—Carbon Steel

Vogt Rating: 150 Pounds Pressure at 750°F.
300 Pounds Cold Non-Shock Pressure
A.S.A. Rating: 150 Pounds Pressure at 500°F.
***275 Pounds Cold Non-Shock Pressure**



Stem threads are not exposed to the service temperature. Seat rings are rolled in body, and can be easily renewed.

Parts subject to wear are easily replaced. Stuffing box can be repacked under pressure when valve is fully open.

Butt weld ends can be furnished; prices on request.

Flange facings must be specified on each order. Regularly furnished with ring joint face; or 1/16-inch raised face and gasket joint.

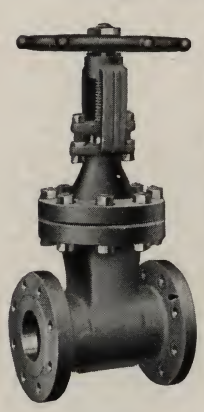
*For steam service, 230 pounds cold non-shock pressure.

Size In.	For Oil Service Ring Joint Face 18-8 Stainless Steel Trimmings No.	18-8 Stainless Steel Trimmings Each	11½-13% Chrome Stainless Steel Trimmings No.	11½-13% Chrome Stainless Steel Trimmings Each	End to End In.	For Steam Service 1/16-Inch Raised Face 11½-13% Chrome Stainless Steel Trimmings No.	11½-13% Chrome Stainless Steel Trimmings Each	Lgth. Between Contact Surfaces In.
2	6168-F8	$115.00	6168	$115.00	7 1/2	6068	$115.00	7
2 1/2	6169-F8	130.00	6169	130.00	8	6069	130.00	7 1/2
3	6170-F8	145.00	6170	145.00	8 1/2	6070	145.00	8
4	6171-F8	200.00	6171	200.00	9 1/2	6071	200.00	9
6	6173-F8	315.00	6173	315.00	11	6073	315.00	10 1/2
8	6174-F8	435.00	6174	435.00	12	6074	435.00	11 1/2

Vogt Drop Forged Steel Gate Valves

Flanges Forged Integral—Round Bolted Bonnet
Bolted Gland—Outside Screw and Yoke
Renewable Seat Rings—Solid Wedge—Slotted Type
Rising Stem

Flanged Ends—Carbon Steel
Ring Joint Face: 300 Pounds Pressure at 750°F.
600 Pounds Cold Non-Shock Pressure
1/16" Raised Face: 300 Pounds Pressure at 750°F.
500 Pounds Cold Non-Shock Pressure



Stem threads are not exposed to the service temperature.

Seat rings are rolled in body, and can be easily renewed.

Parts subject to wear are easily replaced. Stuffing box can be repacked under pressure when valve is fully open.

Butt weld ends can be furnished; prices on request.

Flange facings must be specified on each order. Regularly furnished with ring joint face; or 1/16-inch raised face and gasket joint.

Size In.	For Oil Service Ring Joint Face 18-8 Stainless Steel Trimmings No.	18-8 Stainless Steel Trimmings Each	11½-13% Chrome Stainless Steel Trimmings No.	11½-13% Chrome Stainless Steel Trimmings Each	End to End In.	For Steam Service 1/16-In. Raised Face 11½-13% Chrome Stainless Steel Trimmings No.	11½-13% Chrome Stainless Steel Trimmings Each	Lgth. Between Contact Surfaces In.
2	7488-F8	$165.00	7488	$165.00	9 1/8	8078	$165.00	8 1/2
2 1/2	7489-F8	195.00	7489	195.00	10 1/8	8079	195.00	9 1/2
3	7490-F8	220.00	7490	220.00	11 3/4	8080	220.00	11 1/8
4	7491-F8	285.00	7491	285.00	12 5/8	8081	285.00	12
6	7493-F8	505.00	7493	505.00	16 1/2	8083	505.00	15 7/8
8	7494-F8	745.00	7494	745.00	17 1/8	8084	745.00	16 1/2

Vogt Drop Forged Steel Gate Valves

For Steam Service

Round Bolted Bonnet—Bolted Gland—Gasket Joint Outside Screw and Yoke—Renewable Seat Rings Solid Wedge—Slotted Type—Rising Stem

No. 6883

Screwed Ends

Carbon Steel:
600 Lb. Pressure at 900°F.
2000 Lb. Cold Non-Shock Pressure

Carbon Molybdenum Steel:
600 Lb. Pressure at 950°F.
2500 Lb. Cold Non-Shock Pressure

For corrosive services. For severe steam service, stellite seating surfaces recommended; prices on request.

Flat gasket between body and bonnet; ring gasket also furnished.

No. 5748

Size In.	11½—13% Chrome Stainless Steel Trimmings No.	Each	Monel Metal Trimmings No.	Each	Nitralloy Trimmings No.	Each	End to End In.
½	6883	$39.25	6783	$39.25	4053	$39.25	3⅝
¾	6884	43.75	6784	43.75	4054	43.75	4½
1	6885	48.50	6785	48.50	4055	48.50	5
1¼	6886	56.00	6786	56.00	4056	56.00	6½
1½	6887	63.25	6787	63.25	4057	63.25	7¼
2	6888	75.75	6788	75.75	4058	75.75	9
2½	6889	87.25	6789	87.25	4059	87.25	10¼
3	5748	167.00	5728	167.00	5768	167.00	7¾
4	5749	205.00	5729	205.00	5769	205.00	9⅝
6	5750	320.00	5730	320.00	5770	320.00	13⅝

Vogt Drop Forged Steel Gate Valves

For Steam Service—¼-Inch Raised Face

Flanges Forged Integral—Round Bolted Bonnet Bolted Gland—Gasket Joint—Outside Screw and Yoke Renewable Seat Rings—Solid Wedge—Slotted Type Rising Stem

Flanged Ends

Carbon Steel:
600 Lb. Pressure at 750°F.
1000 Lb. Cold Non-Shock Pressure

Carbon Molybdenum Steel:
600 Lb. Pressure at 900°F.
1200 Lb. Cold Non-Shock Pressure

For corrosive services. Stellite seating surfaces recommended for severe steam service; prices on request.

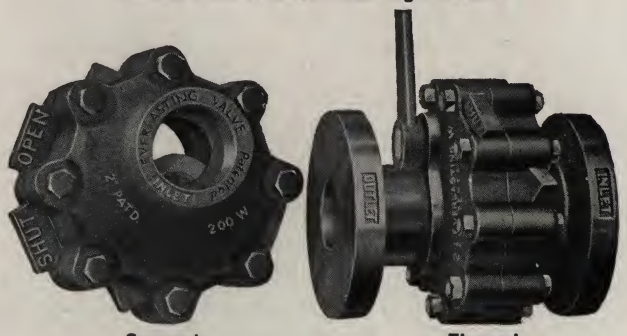
Stuffing box can be repacked under pressure when valve is fully open. Seat rings rolled in body; easily renewed. Stem threads not exposed to service temperatures. Ring gasket can be furnished.

Flange facings must be specified on order. Butt weld ends can be furnished; prices on request.

Size Inches	11½-13% Chrome Stainless Steel Trimmings No.	Each	Monel Metal Trimmings No.	Each	Nitralloy Trimmings No.	Each	Length Between Contact Surfaces In.
½	7003	$54.00	6983	$54.00	5023	$54.00	6½
¾	7004	58.00	6984	58.00	5024	58.00	7½
1	7005	63.00	6985	63.00	5025	63.00	8½
1¼	7006	74.25	6986	74.25	5026	74.25	9
1½	7007	84.50	6987	84.50	5027	84.50	9½
2	7008	106.50	6988	106.50	5028	106.50	11½
2½	7009	143.50	6989	143.50	5029	143.50	13
3	7010	189.50	6990	189.50	5030	189.50	14
4	7011	238.00	6991	238.00	5031	238.00	17
6	7012	640.00	6992	640.00	5032	640.00	22

Model W Everlasting Iron Body Blow-Off Valves

For 250 Pounds Steam Working Pressure

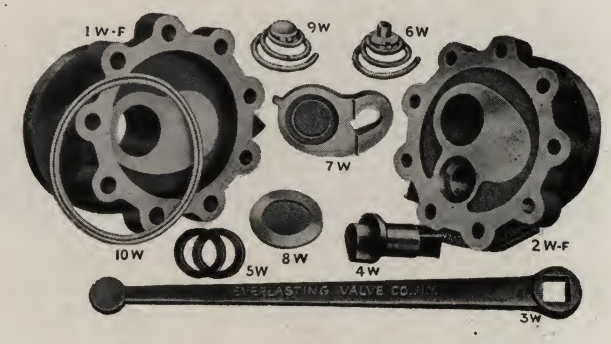


Screwed Flanged

Designed to give continual, uninterrupted service, being self-grinding and self-compensating at all points. Every valve is carefully inspected and tested; all valves for boiler and other high pressure service are worked under 250 pounds steam pressure before leaving the factory.

Size In.	Each Screwed	Flanged	Rack and Pinion Screwed	Flanged	Approximate Face to Face In. Screwed	Flanged	Diam. Flanges In.
¼	$9.00	.....	.....	.....	2⅛	....	....
⅜	9.00	.....	.....	.....	2½	....	....
½	9.00	.....	.....	.....	2½	....	....
¾	11.00	....	.....	.....	3	....	....
1	11.00	$15.00	.....	.....	3½	7¼	4⅞
1¼	16.00	19.00	.....	.....	3⅜	7¼	5¼
1½	22.00	26.00	$31.00	$35.00	4¼	8⅛	6⅛
2	25.00	30.00	34.50	39.00	4⅜	8⅞	6½
2½	32.00	39.00	40.00	48.00	5⅛	10¼	7½
3	44.00	50.00	54.00	60.00	6⅜	11⅞	8¼
4	60.00	70.00	71.00	81.00	6⅞	12	10
5	.....	.....	95.00	100.00	7	12½	11
6	.....	.....	110.00	117.00	7½	13	11

Repairs for Model W Everlasting Blow-Off Valves



The seat of this valve is not merely a ring and a resting place for the disc, but is a plane and a support for the disc throughout the arc of travel.

The disc does not rise from the seat. The inlet is tapered and is slightly less in diameter than the outlet. When valve is wide open, the stream passes straight through without injury to the seat.

When ordering parts, give size of valve and state whether parts for screwed or flanged valves are desired.

Part No.	Description	Each
1WF	Top Bonnet, Flanged	....
2WF	Bottom Bonnet, Flanged	....
3W	Wrench	....
4W	Post	....
5W	Post Gasket Set	....
6W	Post Spring (Conical)	....
7W	Lever Arm	....
8W	Disc	....
9W	Disc Spring (Conical)	....
10W	Body Gasket	....

Prices upon application.

No. 6061

Everlasting's Iron Body Companion Angle Blowoff Valves

For 250 Pounds Steam Working Pressure

A screw-down valve which operates easily and stays tight. Designed so that wearable parts may be easily renewed.

Size Inches	Face of Inlet to Center of Outlet Inches	Center of Inlet to Face of Outlet Inches	Diam. Flanges Inches	Price Each Flanged
1½	4¼	5	6⅛	$44.00
2	5	5½	6½	48.00
2½	6	5¾	7½	57.50

Also made cast steel body for pressure up to 600 lbs.

Prices and dimensions upon application.

Everlasting Duplex Blow-Off Units

Flanged Ends

For 250 and 300 Pounds Steam Working Pressure

No. 4001-6061 Straight Lever Type

No. 4011-6061 and Pinion Type

The regular Everlasting Valve used with Everlasting's Companion Angle Blow-Off Valve furnishes a fine combination of two valves of different types for boiler blow-off service.

The preferred function for the regular Everlasting Valve is that of the seal valve, with that valve installed next to the boiler, when coupled with a slow actuated valve (Everlasting Companion Angle Valve) beyond the Everlasting.

	250-Pound Type With Iron Body				With Cast Steel Body				
Size In.	No. 4001-6061 Straight Lever Type Each	‡No. 4011-6061 Rack and Pinion Type Each	Face Inlet to Ctr. Outlet In.	Ctr. Inlet to Face Outlet In.	†No. 4001-6061 Straight Lever Type Each	‡No. 4011-6061 Rack and Pinion Type Each	Face Inlet to Ctr. Outlet In.	Ctr. Inlet to Face Outlet In.	Diam. Flg. In.
1½	$79.50	$88.50	12⅜	5	$149.00	$158.00	12 9/16	5 1/16	6⅛
2	84.00	93.00	13⅞	5½	163.50	172.00	13⅞	5½	6½
2½	*107.50	116.50	16¼	5¾	214.25	225.00	16¼	5¾	7½

*Valves for pressures over 150 pounds should have rack and pinion operating gear—see No. 2011.

†250-pound type. ‡300-pound type.

Model PWV Lonergan Bronze Quick-Operating Air and Steam Valves

For whistles and other intermittently operated equipment.

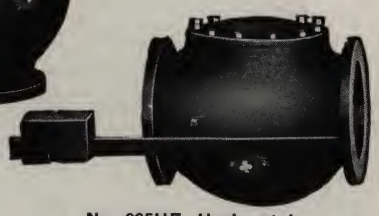
Made of high-grade metal. Valve seats carefully ground and tested. Adjustable lever. While the 2½ and 3-inch sizes are listed, the use of the Model CBV compound balanced whistle valve in these sizes is recommended.

Size Inches	Semi-Finished Each	Finished Each
¼	$2.00	$2.50
⅜	2.00	2.50
½	2.50	3.00
¾	3.00	3.50
1	3.50	4.00
1¼	5.00	6.00
1½	6.00	7.00
2	9.00	11.00
2½	18.00	22.00
3	27.00	35.00

Iron Body Back Pressure Valves

Horizontal and Vertical

No. 895VF, Vertical Flanged



No. 895HF, Horizontal Flanged

Weighted for back pressure up to 5 pounds.

Can be placed in either horizontal or vertical position by changing the position of lever and weight.

	No. 894 Screwed		No. 895 Flanged	
Size Inches	Each	End to End Inches	Faced & Drilled Each	Face to Face Inches
2	$11.00	6½	.....	....
2½	13.00	7	.....	....
3	15.00	8	.....	....
3½	19.00	9	.....	....
4	22.50	10	$26.00	11½
5	33.50	11¼	37.00	13
6	43.00	13	47.00	14
8	.....	....	90.00	19½
10	.....	....	130.00	24½
12	.....	....	200.00	27½

BUY FROM YOUR JOBBER

As your jobber we are carrying your stock of maintenance supplies. We keep down your investment.

You need our service. We need your orders.

Lonergan Bronze Plain Air and Steam Whistles

Made of high-grade bronze, with steel spindle. Has adjustable bell and lever. Can be used with steam or air.

For low pressure, loosen acorn nut on top and screw bell down until whistle gives desired tone; for high pressure, vice versa.

Model PW With Valve

Model PNV Without Valve

Diam. Bell In.	Model PW Each	Model PNV Each	Con. Pipe In.
1	$3.10	$2.20	¼
1¼	3.75	2.75	⅜
1½	4.00	3.00	⅜
2	5.50	4.35	½
2½	6.50	5.25	¾
3	8.50	7.25	1
3½	11.50	9.50	1
4	15.00	12.00	1¼
5	22.50	19.00	1½
6	33.00	24.00	2
8	*95.00	76.00	2
10	*225.00	175.00	2½
12	*425.00	350.00	3

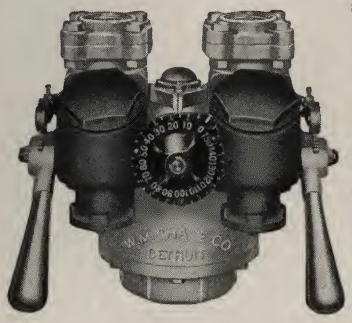
*Have compound balanced valves.

Prices for special whistles upon application.

Chace Automatic Valves

Dial Type

Prevents waste and saves time. Dial is set indicating volume of water wanted, starting handle is raised and valve measures, into the washer, the exact number of gallons desired; shut-off is automatic.



Construction of the valve is such that all measuring mechanism is housed within the valve and directly connected with the dial. Mechanism is operated by a shaft made of monel metal hung by SKF bearings.

Has non-corrosive monel metal valve seats; need never be ground. Piping misalignment strains taken by cast iron manifold.

Flanged inlet furnished to fit 1½, 2, 2½ or 3-inch pipe lines.

Flanged outlet furnished to fit 2, 2½, 3 or 4-inch pipe lines.

Order valve by washer size rather than by size of piping.

Standard, 150-gallon dial type, is for washers up to and including 42x72 inches.

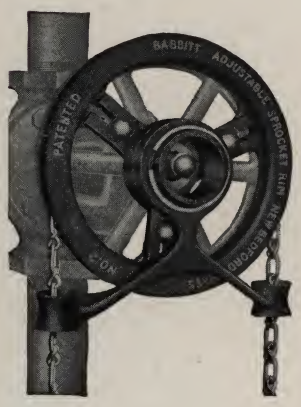
Detroit, 300-gallon dial type, is for washers larger than 42x72 inches and up to and including 42x44x120 inches.

Master, 400-gallon dial type, is for washers 48, 54 and 60 inches in diameter, and any length.

Standard.....each **$75.00**
Detroit.....each **85.00**
Master.....each **150.00**

Babbitt Adjustable Sprocket Rims

With Chain Guides



Every valve in an overhead pipe line should be equipped for immediate operation from the floor. The adjustable sprocket rim gives this instantaneous control by simply pulling the chain.

The rim is adjustable and may be quickly attached to any type of valve wheel whether used for controlling the flow of steam, gas, water, or other liquids, and does not interfere with the rising stem.

When ordering give diameter of valve wheel to be fitted and number of feet of chain required.

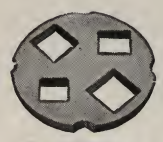
No.	Each	Rust Proof Chain per Foot	Diameter Sprocket Wheel Inches	Will Fit Valve Wheels, Diameter Inches
0	$2.40	$.08	4	2 to 4
1	4.00	.10	5⅞	4⅛ to 5⅞
1½	5.20	.10	7½	6 to 7½
2	6.40	.10	9	7¾ to 9
2½	8.80	.16	12½	9¼ to 12½
3	10.80	.16	15½	12¾ to 15½
3½	15.20	.16	19	15¾ to 19
4	20.00	.24	22	19¼ to 22
4½	28.00	.24	26	22¼ to 26
5	32.00	.24	30	26¼ to 30

No. 189 Jenkins Wire Valve Wheels

Size Valves Inches	Outside Diameter Wheel Inches	Price Each	Size Valves Inches	Outside Diameter Wheel Inches	Price Each
⅛	1½	$.50	1	2⅞	$.65
¼	2⅛	.50	1¼	3¼	.70
⅜	2⅛	.50	1½	3½	1.00
½	2⅜	.50	2	4	1.30
¾	2⅝	.60	2½	4½	1.90

4-In-1 Bakelite Valve Handles

Bottom View of Handle with Steel Plate Removed



Turn Plate to Desired Size Opening

Replace Plate in Handle

This valve handle of molded bakelite can be used on any popular size of radiator valve, gate valve, and any wheel handle valve.

Nos. 1 and 2 will fit four different valve stems. Nos. 3 and 4 will fit four larger sized stems. Nos. 1 and 3, for screw assembly valves. Nos. 2 and 4, for nut assembly valves. Packed 1 dozen in a carton.

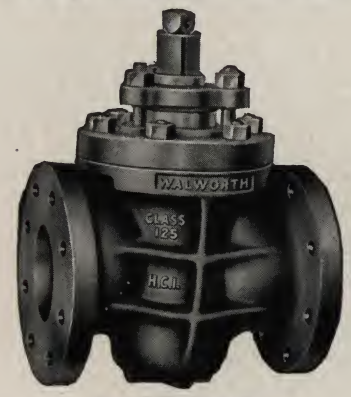
Nos. **1** and **2**.....each **$.20**
Nos. **3** and **4**.....each **.30**

Walworth Class 125 Steeliron Lubricated Plug Valves

Wrench Operated

With Gate Valve Face to Face Dimensions

Working Pressure, 200 Pounds O.W.G.



No. 1718F, Flanged

No. 1718 interchanges with screw end wedge gate valves; No. 1718F with Flanged wedge gate valves; No. 1719F interchanges with flanged end double disc gate valves.

	No. 1718 Screwed		Flanged					
			No. 1718F		No. 1719F			
Size Inches	Each	End to End In.	Each	Face to Face In.	Each	Face to Face In.	Wrench Each	Lubr. Stick Size
6	$70.00	13	$73.00	10½	$73.00	11⅛	$2.10	D
8	.....	..	115.00	11½	115.00	13¼	3.78	G
10	.....	..	200.00	13	200.00	15	3.78	G
12	.....	..	300.00	14	300.00	15½	4.30	G

Flanged valves are shipped faced and drilled unless otherwise specified; no reduction in price for valves faced only.

Walworth Class 150 Steeliron Lubricated Plug Valves

No. 1700, Screwed

Regular Pattern
Wrench Operated
200 Pounds O W.G. Pressure

When ordered drilled, Class 150 Steeliron valves will be drilled to American Standard for 125-Pound cast iron flanged.

Flanged valves are shipped faced and drilled unless otherwise specified. No deductions allowed for valves shipped faced only.

	No. 1700, Scrd.		No. 1700F, Flanged				
Size In.	Each	End to End In.	Each	Face to Face In.	Diam. Flge. In.	Wrench Each	Lubr. Stick Size
½	$8.60	3¼	.....	...	....	$.60	B
¾	8.60	3¾	.....	...	....	.60	B
1	11.00	4	$14.00	5½	4¼	.70	B
1¼	13.00	4¾	14.70	6¼	4⅝	1.00	B
1½	13.60	5	17.00	6½	5	1.00	B
2	15.80	6½	19.20	7½	6	1.30	C
2½	22.60	7 5/16	32.00	8¼	7	1.60	C
3	31.70	8 1/16	36.80	9	7½	2.10	D
3½	.....	....	48.00	10	8½	2.10	D
4	60.50	10	*70.50	*12	9	2.10	D
5	126.00	12	133.00	14	10	3.78	G
6	138.50	13½	140.00	15½	11	3.78	G
8	.....	....	235.00	18	13½	4.30	G

*Available with 9-inch flanged face, No. 1725F at $50.50.

Fairbanks Vulcabeston Iron Cocks

Vulcanized Asbestos Packed
125 Pounds Steam Working Pressure
200 Pounds Cold Water, Oil and Gas Pressure
300 Pounds Hydraulic Test Pressure

No. 0805, Screwed

Size Inches	Price, Each: No. 0805 Screwed	No. 0807 Flanged
⅛	$5.00	....
¼	5.00	....
⅜	5.00	....
½	5.00	....
¾	6.50	....
1	8.00	$9.50
1¼	9.00	10.80
1½	13.00	14.25
2	18.00	21.00

Fairbanks Vulcabeston Iron Cocks

Vulcanized Asbestos Packed

125 Pounds Steam Working Pressure
200 Pounds Cold Water, Oil or Gas Pressure—Non-Shock
300 Pounds Hydrostatic Shell Test Pressure

No. 0805, Screwed

Size Inches	No. 0805 Screwed Each	No. 0807 Flanged Each
2½	$29.50	$32.00
3	44.00	48.00
3½	66.00	71.00
4	73.00	80.00
5	140.00	149.00
6	187.00	200.00

McDonald Square Head Brass Steam Stops

For 125 Pounds Working Pressure

Made from a metal mixture which is 85% copper, 5% each tin, lead and zinc. Carefully machined, thoroughly ground and tested.

Size Inches	Each	No. in. Pkg.	Weight Ounces
¼	$.85	6	6¼
⅜	1.00	6	9
½	1.25	6	11½
¾	1.70	6	16
1	2.35	4	27
1¼	3.70	3	44
1½	4.85	2	64
2	7.30	1	109
2½	14.50	1	162
3	22.50	1	260

Three-way Brass Steam Cocks

Square Head with Check

Made of high grade steam brass, full weight. Carefully finished and ground. They have square head plugs with a check pin to control movement of plug. Thoroughly tested.

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
½	$2.50	1	$3.75	1½	$7.15
¾	3.00	1¼	5.75	2	11.00

Standard Iron Cocks

With Square and Flat Heads

For 125 Pounds Steam Working Pressure

No. 870, Square Head Screwed

No. 871, Flat Head Screwed

Flat heads supplied in screwed sizes only.

	Screwed					Flanged	
	All Iron		With Brass Washer	With Brass Plug and Washer		All Iron	With Brass Plug and Washer
Size Inches	Black Each	Galv. Each	Black Each	Black Each	Galv. Each	Black Each	Black Each
½	$.90	$1.35	$1.00	$1.40	$1.75	.....	.....
¾	1.05	1.60	1.20	1.75	2.15	.....	.....
1	1.30	1.95	1.55	2.15	2.60	.....	.....
1¼	1.60	2.40	1.95	3.00	3.55	.....	.....
1½	1.95	2.95	2.35	4.15	4.85	.....	.....
2	2.70	4.05	3.20	5.75	6.70	$4.25	$7.50
2½	4.40	6.60	5.15	9.50	11.00	6.25	11.25
3	6.75	10.15	7.75	14.00	16.30	9.50	16.75
4	15.50	23.25	19.00	40.00	45.25	19.00	43.50

Standard Screwed Three-Way Iron Cocks

Square Head

125 Pounds Service Steam, Air or Gas Pressure
150 Pounds Non-Shock Service Cold Oil or Water Pressure

No. 872

Size In.	No. 872 All Iron Each	No. 872A Galvanized Each	End to End Inches	Center to End of Outlet Inches
3/4	$1.65	$2.50	3 1/16	1 1/2
1	1.80	2.70	3 5/8	1 11/16
1 1/4	2.05	3.10	4 1/16	1 7/8
1 1/2	2.65	4.00	4 5/8	2 1/16
2	3.65	5.50	5 1/2	2 3/8
2 1/2	5.35	8.00	6 7/8	3
3	7.50	11.25	8 1/8	3 3/8
4	19.00	28.50	10	4 1/4

Prices of flanged three-way cocks upon application.

McDonald Flat Head Gas Service Stops

Without Check
Plate E10595

With Check
Plate E10596

Size Inches	Without Check: Standard Each	Without Check: Extra Heavy Each	With Check Standard Each
1/4	$1.35	$1.50	$1.60
3/8	1.45	1.60	1.70
1/2	1.55	1.70	1.80
3/4	1.80	2.15	2.10
1	2.30	2.80	2.75
1 1/4	3.25	4.05	3.90
1 1/2	5.15	6.30	5.90
2	8.55	9.75	9.30
2 1/2	18.75	22.00	19.85
3	28.90	32.50	30.30

Standard Brass Gas Service Cocks

Flat Head, Male and Female

Size In.	No 896 Without Check (Each)	No. 897 With Check (Each)	Size In.	No. 896 Without Check (Each)	No. 897 With Check (Each)	Size In.	No. 896 Without Check (Each)	No. 897 With Check (Each)
1/4	$1.10	.....	3/4	$1.55	$1.80	1 1/2	$5.45	$5.95
3/8	1.20	$1.35	1	2.40	2.70	2	9.15	9.90
1/2	1.30	1.50	1 1/4	3.65	4.10	...	....	....

No. 916 Flat Head Brass Gas Service Lock Cocks

Size Inches	Each	Size Inches	Each
1/2	$1.40	1 1/4	$3.85
3/4	1.60	1 1/2	5.35
1	2.50	2	9.00

McDonald Square Head Gas Service Stops

Without Check
Plate E10603

With Check
Plate E10604

Size Inches	Without Check: Standard Each	Without Check: Extra Heavy Each	With Check Standard Each
1/4	$1.35	$1.50	$1.60
3/8	1.45	1.60	1.70
1/2	1.55	1.70	1.80
3/4	1.80	2.15	2.10
1	2.30	2.80	2.75
1 1/4	3.25	4.05	3.90
1 1/2	5.15	6.30	5.90
2	8.55	9.75	9.30
2 1/2	18.75	22.00	19.85
3	28.90	32.50	30.30

McDonald Tee Head Gas Service Stops

Without Check
Plate E10591

With Check
Plate E10592

Size In.	Without Check: Standard Each	Without Check: Extra Heavy Each	With Check Standard Each	Size In.	Without Check: Standard Each	Without Check: Extra Heavy Each	With Check Standard Each
1/4	$1.35	$1.50	$1.60	1	$2.30	$2.80	$2.75
3/8	1.45	1.60	1.70	1 1/4	3.25	4.05	3.90
1/2	1.55	1.70	1.80	1 1/2	5.15	6.30	5.90
3/4	1.80	2.15	2.10	2	8.55	9.75	9.30

Plate E10598

McDonald Gas Service Stops

Solid Brass Lever Handle With Check

Size In.	Each	Size In.	Each
3/8	$1.85	1	$2.95
1/2	1.95	1 1/4	4.25
3/4	2.25	...	....

Wrenches for Brass Steam and Gas Cocks

Square and Flat Head

Size In.	Square Head Each	Flat Head Each	Size Inches	Square Head Each	Flat Head Each	Size Inches	Square Head Each	Flat Head Each
1/4	$.05	$.05	1	$.15	$.15	2 1/2	$.82	$.82
3/8	.06	.06	1 1/4	.20	.20	3	1.20	1.20
1/2	.07	.07	1 1/2	.29	.29	4	1.60	....
3/4	.11	.11	2	.48	.48	...	....	....

No. 81 Gas Cock Wrenches

Malleable Iron

This style furnished unless otherwise specified.

No.....	0	1	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2
Size Nut.....	8/32	11/32	13/32	14/32	15/32	17/32	20/32	22/32	23/32	24/32
No.....	6	6 1/2	7	7 1/2	8	8 1/2	9	10	11	12
Size Nut.....	26/32	28/32	30/32	1 1/32	1 3/32	1 6/32	1 10/32	1 16/32	1 23/32	1 27/32

Imperial Brass Gasoline Shut-Off Cocks

Compression Coupling Types

Nos. 27-EF to 57-EF

Nos. 28-EF to 58-EF

Each plug is individually ground into the body to a perfect seat and is held by a coiled spring at bottom.

A notched washer locks the plug in both open and shut positions. The square on threaded side gives a broad bearing for the wrench.

Handle is polished, body is bright brass finish.

Packed 5 in a box.

No.	Connections, Inches Tubing Coupling	I. P. Thread	Weight Pounds per 100	Price Each
27-EF	1/4	1/8	22 1/2	$1.30
227-EF	1/4	1/4	24	1.40
29-EF	5/16	1/8	22 1/2	1.30
229-EF	5/16	1/4	25	1.40
57-EF	3/8	1/4	31 1/2	1.45

No.	Connections, Inches Tubing Coupling	I. P. Thread	Weight Pounds per 100	Price Each
28-EF	1/4	..	24	$1.30
30-EF	5/16	..	25	1.40
58-EF	3/8		31	1.70

Imperial Brass Gasoline Shut-Off Cocks

S.A.E. Coupling Type

Plug is ground into body and held by a phosphor bronze coiled spring at the bottom. Handle is polished; body is bright brass finish. Without nuts.

Packed 5 in a standard package.

No.	Each	O.D. Tubing In.	I.P.T. In.	Wt. Lbs. per 100
27SAE	$1.20	1/4	1/8	22
227SAE	1.30	1/4	1/4	22 1/2
29SAE	1.20	5/16	1/8	22 1/2
229SAE	1.40	5/16	1/4	23
57SAE	1.50	3/8	1/4	27 1/2

Imperial Brass Gasoline Shut-Off Cocks

S.A.E. Coupling Type

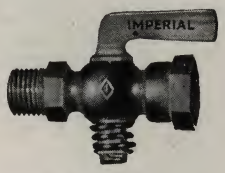
Each plug is individually ground into a perfect seat and held tight by a phosphor bronze coiled spring at the bottom. Will open and close at a slight turn of lever handle. Packed 5 in a box.

Price does not include S.A.E. nuts. If nuts are desired, specify with nuts when ordering.

No.	28-SAE	30-SAE	58-SAE
Each	$1.25	1.30	1.50
O.D. of Tubing ..... inches	1/4	5/16	3/8
Weight per 100 ..... pounds	21	22 1/2	30 5/8

Imperial Brass Shut-off Cocks

Nos. 31E and 32E



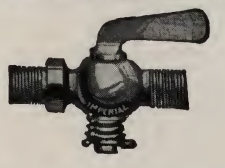
Nos. 48E and 49E

Plug is ground into body. Held tight by a coiled spring.

Cat. No.	Each	I.P. Thrd., In.	Description	Std. Pkg.	Wt., Lbs per 100
31E	$1.05	1/8	Female	5	20
32E	1.20	1/4	Female	5	22
48E	.98	1/8	Male and Female	5	16
49E	1.20	1/4	Male and Female	5	20

Imperial Brass Gasoline Shut-Off Cocks

Double Male, I.P. Thread



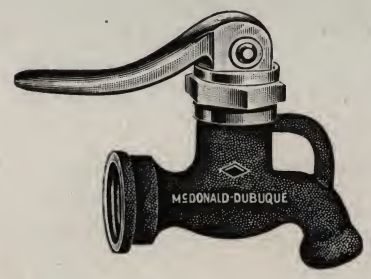
Each plug is individually ground into the body to a perfect seat and is held tight by a coiled spring at the bottom.

The square on the threaded side gives a broad bearing for the wrench. Body and handle are bright brass finish.

Packed 5 in a box.

No.	76-E	77-E
Each	$.98	1.25
Size, I.P. Thread ..... inches	1/8x1/8	1/4x1/4
Weight per 100 ..... pounds	12 1/2	20

No. 880 McDonald Radiator Fill Faucets



Rough brass nickel plated auto radiator fill faucets with fulcrum handle and hang loop, with 3/4-inch female hose thread.

This faucet insures against water puddles at garages and filling stations.

Flow of water stops immediately when handle is released, positively no leakage.

Size 3/4-inch fits 1/2, 5/8 or 3/4-inch hose coupling.

No. 880 ..... each $1.50

No. 950 McDonald Improved Radiator Fill Faucets

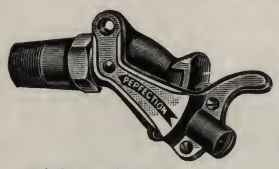
Practically no wear on major parts of this faucet. Made of high grade bronze anti-splash, no after drip.

Size, 3/4 inch. Fits 1/2 or 3/4-inch hose couplings.

Weight, 1 pound.

No. 950 ..... each $1.41

Perfection Oil and Molasses Gates



With padlock eyes.

Fine Screw Thread Tapered Shank for Wood			Standard Pipe Thread		
No.	Size In.	Price per Doz.	No.	Size In.	Price per Doz.
51	¾	$17.00	71	¾	$17.00
52	1	17.60	72	1	17.60
53	1¼	20.35	73	1¼	20.35
54	1½	24.20	74	1½	24.20
55	2	33.00	75	2	33.00

No. G261 Imperial Self-Closing Barrel Faucets

Has ¾-inch i.p.t. Fits a 1-inch opening in steel drums and barrels. Holds oil, kerosene, gasoline, alcohol, light varnish, thinners and most other liquids.

Opens by pushing lever handle. Automatically closes when handle is released. Easily locked closed with padlock or held open with pencil, etc. Should grit collect on metal seat causing leakage, pressing lever open and letting snap closed a few times will reseat faucet, thus stopping leaking.

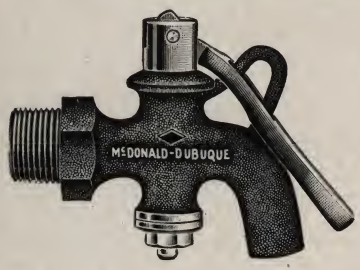
Metal to metal seat. No packing to wear out. Made of non-corrosive material.

Packed 12 in box. Wt. 12 ounces each.

No. G261.....each **$1.10**

No. E11001 McDonald Lock Lever Oil Faucets

For Steel Oil Barrels and Drums



For use with gasoline or other liquid petroleum products.

Made of plain iron pipe; rough plain bibb.

Can also be furnished with hose end at slight additional charge.

Size.....inches	½	⅝	¾	1	1¼	1½
No. E11001.....each	$.76	.79	.88	1.39	3.00	3.51
I.P.T. Connection....inches	...	¾	¾	....	....	....

McDonald Swivel Reducer Couplings

Plate 807

A necessity for underneath unloading. Furnished in brass or malleable.

The reducer coupling is extra heavy and fits the 5-inch underneath outlet of the tank car, while the other end is threaded for iron pipe. It has a specially treated leather gasket to make a tight joint between the tank car connection and coupling.

Size Inches	Approx. Wt., Lbs.	Brass Each
5x2	11	$14.28
5x2½	11½	16.30
5x3	13½	18.70
5x4	15½	21.95

No. 807-A McDonald Tank Car Reducer Couplings

45° Angle—Swivel Type

All bronze, with male outlet thread. Furnished with treated leather gasket and forged steel spanner wrench.

Size....in.	5x2	5x2½	5x3	5x4
Each.....	$13.97	15.50	17.70	20.80
Weight..lb.	8¾	9¾	10¾	12½

No. 939 McDonald Fit-All Nozzles

Plain Bronze—For Meter Pumps

Compound lever type, no chatter, full flow, comfortable grip, fits all regular meter pumps. With flexible spout, but can be supplied with solid spout.

Sizes, ¾ and 1 inches.

No. **939**, with Flexible Spout....each **$5.06**
No. **939**, with Solid Spout.....each **4.80**

No. 942 McDonald Ful-Flow Bronze Hose Nozzles

For Fuel Oil Delivery

Designed to give the maximum volume of flow with the greatest possible speed. Nozzle is of the compound lever type to eliminate chatter. Can be furnished with outlet or inlet check valve. High grade bronze thoughout with special composition disc. Has 1½-inch i.p.t. outlets.

For Hose Size....inches	1¼	1½
No. **942**, without Tube .....each	$10.21	$11.62
With Solid Tube...each	11.44	13.24
With Flexible Tube.each	12.32	14.34
For Inlet Check Valve.....extra	1.60	2.40
For Outlet Check Valve.....extra	2.40	2.40
Weight, less Tube.....pounds	6½	6½
Weight, with Tube.....pounds	8	8

For aluminum protector cap with brass chain for tubes of nozzles, add $2.06. For 60 mesh outlet strainer add $3.07 100 mesh, $3.85.

No. 942-S McDonald Shockproof Bronze Hose Nozzles

For Fuel Oil Delivery

With Outlet Type Check Valve

No shock or hammer experienced when delivering fuel oil under pressure from truck tanks. Easy opening of valve against pressure. Regardless of pressure, delivery controlled to smallest fraction without chatter. Full volume of flow is obtainable. Furnished with or without check valve. If check valve is desired, specify inlet or outlet type. Nozzle is high grade bronze throughout with special composition disc. Tapped 1½-inch i.p.t. at outlet end. Notches in rear guard regulate rate of flow.

For Hose Size.....inches	1¼	1½
No. **942-S**, without Tube.....each	$10.73	$12.19
With Solid Tube.....each	11.96	13.82
With Flexible Tube.....each	12.84	14.92
For Inlet Check Valve.....extra	1.60	2.40
For Outlet Check Valve.....extra	2.40	2.40
Weight, less Tube.....pounds	6½	6½
Weight, with Tube.....pounds	8	8

McDonald Slo-Self Closing Loading Line Valves

No. 945, Straight Type

No. 956, Angle Type

For pressure loading. Slo-closing effect takes place only momentarily to prevent the valve banging shut when the handle is suddenly released. Eliminates hammer.

Hydraulic control of valve plunger prevents excessive pressure building up on the line. Draws liquid into control chamber through bypass orifice when plunger moves toward closing position. Parabolic cam located directly under valve plunger makes it possible for unusual easy opening regardless of pressure. Full flow. Furnished with standard type handle, although an adjustable handle which can be placed in any desired angle in the open or closed position is available. If valve is to stay open of its own accord suffix letter L to No.

Easily repacked. The valve disc is made of special composition. Bronze throughout with exception of malleable iron handle, steel valve stem and roller, and cadmium plated valve cap screws.

Size.....inches	2	2½	3
No. **945** or **956**.....each	**$22.99**	**29.21**	**40.70**
Approx. Wt., No. 945.....pounds	17	25	31
Approx. Wt., No. 956.....pounds	19¼	24¼	30¼

No. **967**, Adjustable Handle Only.....each **$1.82**

No. 951 McDonald Standard Iron Hinged Truck Tank Caps

For use on old or new types of truck tanks and on any 6-inch threaded dome opening. Oversize triplex bronze venting unit, fully protected by fire screen, constructed to eliminate splashing through vent. Pressure poppet is ample size and vacuum poppet is oversize which insures against restriction in delivery. The triplex feature prevents loss of liquid in case truck tank is overturned. In case of fire, the 6-inch cover plate raises when internal pressure reached 2¼ pounds. When pressure decreases cover closes. The machine faced seat with gasket together with hinged bar with central equalizing spring and screw insures the cover being tightly closed. If specified, cover can be furnished to be locked with padlock

No. **951**, Weight, 12½ Pounds.....each **$7.10**
Leather Gasket.....each **.44**
Composition Gasket for Cover Plate.....each **.44**

No. 842 McDonald Self-Closing Truck Tank Faucets

Made of high grade bronze. Disc will not swell in gasoline. Can be held ⅓, ⅔ or fully open. Hose end is removable. Stem is of steel, handle of malleable iron.

Cap at outlet has special swivel hinge hasp.

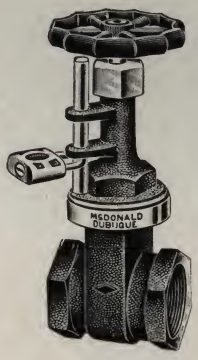
Size.....in.	1½	2
Without Cap and Chain...each	**$7.22**	**$9.03**
With Cap and Chain...each	**7.65**	**9.52**
Approx.Wt..lbs.	7½	9¼

Prices include handle. Deduct 68 cents if handle is not desired.

No. 846 McDonald Lock Gate Valves

Screw Type

For Oil and Gasoline



The locking pin is a strong ¾-inch steel rod and operates through holes drilled in the two ears cast on the bonnet or center piece of the valve.

Valve is so constructed that when closed tightly the wheel can be reversed a quarter turn without raising the disc.

Malleable iron wheel riveted to stem.

Size.....in.	1½	2	2½	3
No. **846**...ea.	**$6.78**	**8.97**	**14.74**	**21.18**
Weight....lb.	5¾	9	20½	27

Prices include ¾-inch locking pin but do not include padlock. Extra for padlock with two keys, 66 cents.

No. 848 McDonald Brass Self-Closing Lever Throttle Valves

This valve is particularly convenient on barrel or tank wagon filling lines. The steel spring which encircles the valve stem is strong and durable and of proper tension to close valve instantly when the lever is released.

The double wedge gates are so guided by the body that they will not bind or stick.

Guaranteed to be tight under gasoline and oil. The valve has a special prepared packing in the stuffing box to prevent leakage around the stem.

Size....inches	2	2½	3
No. **848**..each	**$13.40**	**22.17**	**31.41**

No. 1028 Chase Bronze Oil Tank Valves

Inlet, Male I.P.S.—Outlet, Flared Copper

Bronze valve with stuffing box, lead seat and iron wheel handle.

Size..inches	¼	⅜	½	¾
No. **1028**.ea.	**$1.40**	**1.40**	**1.40**	**1.85**

No. 801 Flagg Malleable Iron Air Vents

Brass Screens Metal Retainers

Size In.	Black Each	Galv. Each
¾	**$.52**	**$.60**
1	.52	.60
1¼	.70	.75
1½	1.10	1.25
2	1.10	1.25

Mushroom Type Vents

Tapped ¾, 1, 1¼, 1½, and 2 inches.

Furnished with brass screens if desired.

Size.....inches	¾	1	1¼	1½	2
Black.....each	$.15	.16	.17	.26	.38
Galvanized.....each	$.18	.20	.22	.30	.44
Extra for Screens. .....each	$.03	.03	.04	.05	.05

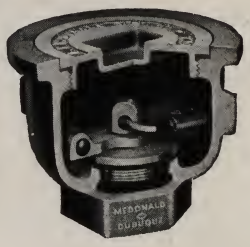
No. 550 Flagg Fill Boxes

Light Flush Type

Has brass cap, malleable iron wrench and leather washer.

Size In.	Black Each	Galvanized Each	Cadmium Plated Each
1½	$1.00	$1.10	$1.10
2	1.25	1.35	1.35
2½	2.00	2.25	2.25
3	2.75	3.00	3.00
4	4.60	5.00	5.00
6	9.00	10.00	10.00

No. 928 McDonald Lock Type Flush Fill Boxes



Lock cap easily accessible, absolutely water tight. Can be furnished with drain hole when specified. Wrench furnished with box.

Size.....inches	2	2½	3
Each.....	$4.87	6.17	7.71
Weight.....pounds	10	11½	15¼

McDonald Vented Fill Caps

Cast Iron

Plate 882

The McDonald Vented Fill Caps are of the hinged cover type. These caps may be locked to prevent theft of the contents of tanks.

Size.....inches	2	2½	3
Weight, Each.....pounds	1⅝	3⅝	5
Each.....	$.70	.89	1.11

McDonald Double Tapped Bushings

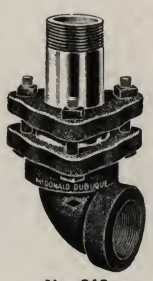
Plate 881

We carry a complete stock of Double Tapped Bushings for use in making connections at underground storage tanks.

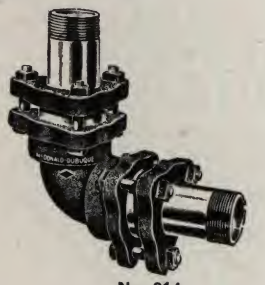
Size Inches	Each	Size Inches	Each
2 x1	$.44	3 x2	$.55
2 x1¼	.44	3½x1½	.55
2 x1½	.44	3½x2	.55
2½x1½	.57	4 x1½	.99
2½x2	.57	4 x2	.99
3 x1½	.55	.....	....

McDonald Swing Joints

Iron Body—Bolted Iron Gland



No. 813 Single



No. 814 Double

Universally used wherever flexible joints in pipe lines are required, particularly in petroleum lines. They give free rotary motion without leakage.

Heavy durable construction—cast iron body and cast brass ferrules. Ferrules are threaded with standard iron pipe thread. Specially treated strand packing prevents any leakage through stuffing box.

Size In.	No. 813 Single Each	Wt., Lb.	No. 814 Double Each	Wt., Lb.	Size In.	No. 813 Single Each	Wt., Lb.	No. 814 Double Each	Wt., Lb.
*¾	$2.92	1½	$4.42	2½	3	$15.35	26	$24.20	43
*1	3.33	2	5.04	3¼	4	30.26	35	43.40	57
1¼	4.66	9½	6.85	16½	6	113.25	94	188.20	134
1½	4.95	9¾	8.35	17	8	.....	179	.....	252
2	7.85	14	13.06	23¼	10	.....	237	.....	340
2½	9.90	19½	15.68	32	12	.....	...	.....	...

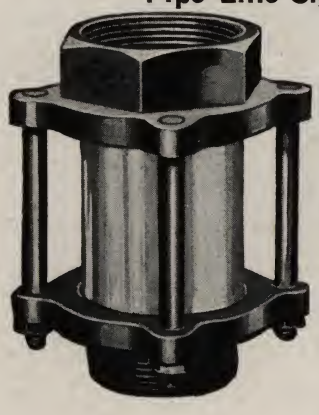
*Nos. 813 and 814 in sizes ¾ and 1 inch are all bronze.

McDonald All-Brass Curb Pump Swing Joints

Made in various patterns in ¾, 1 and 1¼-inch iron pipe thread sizes.

Prices upon application.

Pipe Line Sight Glasses



Brass pipe line observer or sight glass.

Furnished in sizes ¾, 1, 1¼, 1½, 2, 2½, and 3 inches.

For iron pipe or hose thread.

Prices upon application.

No. CRC-425 DL Improved Clearview Oil Gauges

Type C—Multiple Float Type

Used with inside basement fuel oil storage tanks. The string of floats is inserted within the tank opening and the tank bushing of the gauge made tight.

Head is made of an unbreakable plastic which is pressure tight. It has a large, 3-inch scale and can be easily adjusted so that the scale can be read from any desired direction.

Gauge is operated by the weight of that portion of a string of plastic floats not supported by the fuel in the tank. Changes in fuel level vary the unsupported weight of the floats which changes the location of the indicator.

Can be had for tanks having the following vertical dimensions: 26 to 27, 42 to 44, or 60 inches. Supplied with the tank bushing threaded either 1½ or 2-inch i.p.t. When ordering, specify length of gauge and size of tank bushing.

Approximage shipping weight, 2 pounds.

For **26** to **27** or **42** to **44**-Inch Tanks.....each **$2.00**
For **60**-Inch Tanks.....each **3.00**

No. CRC-725 DL Improved Clearview Oil Gauges

Type B—Lever Type

For use with inside fuel oil tanks. Approved by Massachusetts Department of Public Safety and New York Board of Standards and Appeals.

The large, easily read, 3-inch scale is protected by a plastic head. May be adjusted to face in any desired direction. The unbreakable plastic head is oil and pressure tight. Flange and union construction permits easy installation regardless of fuel level.

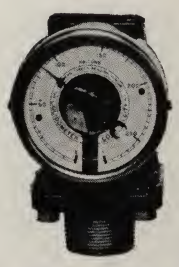
Operation is through direct leverage. All metal parts, submerged in oil, are cadmium plated and all bearings are of bronze. Float is made of a special plastic which is not affected by oil or moisture.

Can be had for tanks having the following vertical dimensions: 22 to 24, 26 to 27, 42 to 44 and 46 to 48 inches. Supplied with either 1½ or 2-inch pipe thread tank bushing. When ordering, specify length of gauge and size of tank bushing.

Approximate shipping weight, 2 pounds.

No. CRC-**725**.....each **$1.65**

Liquidometer Junior Direct-Reading Tank Gauges



This is not a magnetic gauge. It is designed for use on basement or "inside" tanks. It has a large dial and provisions for adjusting the pointer travel relative to the tank depth. There are no gears in the float unit to hang up. The float is made of metal instead of cork. The dial is 3¼ inches in diameter. Requires only a few minutes to install regardless of whether there is oil in the tank or not.

When ordering, specify shape of tank whether horizontal obround, vertical obround, cylindrical or rectangular; dimensions of tank; whether dial in proportions of tank volume, or gallons is desired.

Price upon application.

Levelometer Dial Type Liquid Level Gauges

For Fuel Oil, Diesel Oil, Gasoline and Other Liquids

Levelometer operates on an adaptation of the hydrostatic principle. No liquid is used in the indicator to be affected by temperature changes, to evaporate, to stain the glass or to be blown out by excessive pumping. Approved by Underwriters' Laboratories.

Dial has large, easy to read graduations and numerals. May be supplied to read in feet and inches, gallons, litres, pounds or any other unit of measurement. Can be located at any reasonable distance from the tank.

When ordering specify type Levelometer desired; length of tubing required (distance from top of the tank to desired dial location); specific gravity, Baume, or grade of liquid; diameter or height of tank if dial in inches is desired, or complete dimensions of tank if dial in gallons, pounds or litres is desired; and size of gauge opening in tank, if other than 2 inches.

Equipped with 30 feet of tubing and all fittings necessary for installation. For each additional foot of tubing, add 7 cents.

Midget

Used on residence oil burner tanks, small diesel plants and other installations where tanks are 48 inches deep or less.

Can also be used on tanks up to 12 feet deep.

Size case, 4½x4½ inches.

Shipping weight, 7 pounds.

Each..... **$18.00**

Small

Has a wider dial range than the Midget. Used on small industrial oil burner installations and other places where tanks 7 feet deep or less are used.

Size case, 6x6 inches.

Shipping weight, 9 pounds.

Each..... **$25.00**

Large

Has a dial range about twice that of the Small type. Generally used on large industrial oil burner installations.

Permits a closer indication of the tank's contents than is possible with the Midget or Small Levelometers.

Size case, 12x12 inches.

Shipping weight, 16 pounds.

Each..... **$50.00**

Master

Provides a dial approximately 12 inches in diameter with a pointer travel of 26 inches.

This makes it possible to provide graduations for every inch or equivalent gallons, in a tank as high as 30 feet.

Size case, 13¼x13¼ inches.

Shipping weight, 30 pounds.

Each..... **$80.00**

Series CRC-100 DL Anti-Siphon Valves

Installed to prevent oil siphoning out of the tank in the event of oil line breakage or a leak at the nozzle cut-off valve.

Meets requirements of the various Fire Underwriters' rulings and New York City Code.

The Underwriters' Laboratories require that anti-siphon valve must not open at vacuums lower than required to protect the head of oil in the pipe between valve and floor.

Some fuel tanks are installed at such a level that when the tank is partially empty there is a return flow head. In such cases, the spring located in the top of the ball prevents fuel in the delivery line returning to the supply tank which would cause loss of pump prime.

Accordingly, unit is not only an anti-syphon valve but an efficient ball check valve as well. Eliminates necessity of installing foot valve or check valve in the suction line.

Type V

Where distance from center line of valve to that of a horizontal pipe along the floor is 5 feet or less, the Type V valve which requires only 4 inch vacuum to open it should be used. This puts a minimum penalty on the pump.

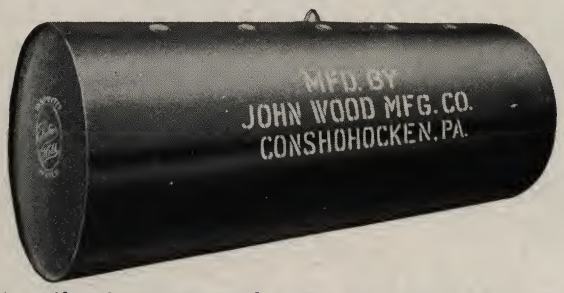
Size.....inches		3/8	1/2
Type V.....each		$6.05	6.05

Type S

Where the distance is over 5 feet up to 10 feet, which is the maximum permitted, Type S valve should be used.

Size.....inches	3/8	1/2	1 1/4	2
Type S.....each	$6.05	6.05	36.00	36.00

Electric Weld Underground Oil and Gasoline Storage Tanks



A uniformly constructed tank, guaranteed tight, full weight, heavy gage. Has reinforced pipe size openings. Hoisting hook is provided to facilitate handling.

Electric welding is accomplished through developed mechanical turntables and automatic equipment.

Approx. Cap. Gal.	Diam. In.	Lgth. In.	Steel Thickness Head & Shell Gage or In.	Openings Inches	Type	Approx. Weight Pounds
110	28	44	No. 16	2–3	Galv.	100
282	42	48	No. 12	3½–2–2	Galv.	297
282	42	48	No. 14	3½–3–2	Galv.	225
282	36	65	3/16″	3½–2–2–2–2	Black	552
557	42	96	No. 14	3½–3½–3½–3½	Galv.	386
557	42	96	No. 12	3½–3–2	Galv.	508
551	49	69¼	3/16″	3½–2–2–2–2	Black	800
***1000**	49	125	3/16″	3½–2–2–2–2	Black	1307
†1000	49	125	3/16″	3½–3–2–3½	Black	1307
1036	46	144	No. 12	3½–3½–3½–3½	Galv.	776
1005	64	75	3/16″	3½–2–2–2–2	Black	1168
1518	49	186	3/16″	3½–2–2–2–2	Black	1803
1508	64	109½	3/16″	3½–2–2–2–2	Black	1659
2010	64	144	3/16″	3½–2–2–2–2	Black	1969

*Oil. †Gasoline.

Electric Weld Basement Oil Storage Tanks

Horizontal or Vertical—275 Gallon Capacity

Underwriters' Labelled

Horizontal

Vertical

Tappings: four 2-inch pipe size openings on top and one ½-inch opening in the head near the bottom.

Furnished horizontal or vertical.

Extra Heavy Weight No. 12 Gage

Description	Regular 26x44x64 In. Each	Regular Ship. Wt. Lb.	Narrow 22x44x74 In. Each	Narrow Ship. Wt. Lb.
Tank and Lugs.....	$36.00	307	$38.00	300
Tank, Lugs and Gauge.....	38.50	309	40.50	302
Tank and 36-Inch Stand.....	39.60	347	41.60	340
Tank and 18-Inch Stand.....	37.80	325	39.80	318
Gauge Only.....	2.50	...	2.50	...

Standard Weight
No. 14 Gage Shell—No. 12 Gage Heads

Tank and Lugs.....	$34.00	243	$36.00	251
Tank, Lugs and Gauge.....	36.50	245	38.50	253
Tank and 36-Inch Stand.....	37.60	283	39.60	291
Tank and 18-Inch Stand.....	35.80	261	37.80	261
Gauge Only.....	2.50	...	2.50	...

Range Oil Storage Tanks

110-Gallon Capacity—Massachusetts Regulation

Cylindrical tank is 24 inches in diameter and 60 inches long. Shell is made in one piece. Heads are flanged for rigidity. All openings are heavy steel flanges welded to tank.

Stand is saw-horse type, designed to withstand weight many times in excess of the tank filled with oil. There is no assembly work when setting up the stand, no braces to be fastened, and no screws to contend with.

Stand can be used with oil drums in districts where drums are not prohibited, and are sold separately if specified.

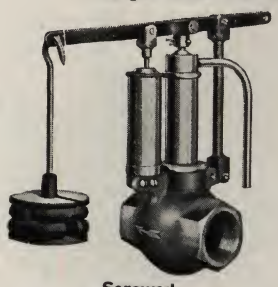
Regularly painted black; dark green or gray at extra cost.

16-Gage Tank, Weight 102 Pounds.....each ....
Stand for Tank, Also Ordinary Drum, Weight 18 Pounds.....each ....

No. 1 Klipfel Reducing Valves

Piston Type

Screwed Ends—For Pressures to 150 Pounds
Flanged Ends—For Pressures to 125 or 250 Pounds



Screwed

Used to reduce steam pressure and maintain reduced pressure automatically at any desired value above 10 pounds. Not intended for water or air service.

No. 1 valve in sizes 1½ inch and smaller has bronze body, bronze trim, and integral seat. Sizes 2 inches and larger have semi-steel body with bronze trim, including renewable bronze seat bushing.

When ordering, give reduced pressure required, also initial steam pressure, valve size, and state whether screwed or flanged ends.

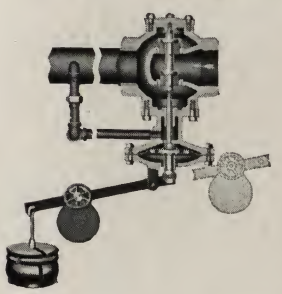
Size In.	Screwed Each	Screwed End to End, In.	Standard Flanged Each	Standard Flanged Face to Face, In.	Standard Flanged Diam. Flg. In.	Ex. Hvy. Flanged Each	Ex. Hvy. Flanged Face to Face, In.	Ex. Hvy. Flanged Diam. Flg. In.
⅜–½	$45.00	3⅞	.....	....	....	.....	....	....
¾	45.00	3⅞	.....	....	....	.....	....	....
1	50.00	4⅛	.....	....	....	.....	....	....
1¼	55.00	4¼	.....	....	....	.....	....	....
1½	60.00	4⅞	.....	....	....	.....	....	....
2	70.00	6⅞	$75.00	7½	6	$30.00	8	6½
2½	85.00	8	90.00	9	7	95.00	9⅝	7½
3	100.00	9⅛	105.00	9¾	7½	110.00	10½	8¼
3½	120.00	9⅜	125.00	10⅛	8½	130.00	10⅞	9
4	140.00	9⅞	145.00	10⅝	9	150.00	11¼	10
5	170.00	11¼	175.00	12⅛	10	185.00	13	11
6	220.00	12¼	225.00	13	11	235.00	13⅞	12½

No. 2 valves are the same as No. 1 except they have expanded outlets. Made in sizes 1x2 to 8x16 inches. Information and prices upon application.

Valves with cast steel bodies or alloy trim can be supplied. Prices upon application.

No. 3 Klipfel Reducing Valves

Diaphragm Type



For low reduced pressures, from vacuum to limiting pressures given in table below.

For supplying steam to heating systems and for water, air, or gas service.

Standard construction includes: semi-steel body, bronze trim, renewable seat bushings; screwed or flanged ends.

Size In.	Screwed Each	Screwed End to End, In.	Standard Flanged Each	Standard Flanged Face to Face In.	Standard Flanged Diam. Flg. In.	Ex. Hvy. Flanged Each	Ex. Hvy. Flanged Face to Face In.	Ex. Hvy. Flanged Diam. Flg. In.	Max. Red. Press. Lb.
2	$70.00	6⅞	$75.00	7½	6	$80.00	8	6½	15
2½	85.00	8	90.00	9	7	95.00	9⅝	7½	15
3	100.00	9⅛	105.00	9¾	7½	110.00	10½	8¼	15
3½	120.00	9⅜	125.00	10⅛	8½	130.00	10⅞	9	15
4	140.00	9⅞	145.00	10⅝	9	150.00	11¼	10	15
5	170.00	11¼	175.00	12⅛	10	185.00	13	11	10
6	195.00	12¼	200.00	13	11	210.00	13⅞	12½	10
7	.....	....	250.00	14⅝	12½	275.00	15⅝	14	5
8	.....	....	325.00	16¼	13½	350.00	17¼	15	5
10	.....	....	400.00	20¼	16	425.00	21⅝	17½	5
12	.....	....	600.00	22⅝	19	625.00	24⅛	20½	5
14	.....	....	800.00	26⅜	21	850.00	27⅞	23	5

No. 4 valves are the same as No. 3 except they have expanded outlets. Made in sizes 1x2 to 12x24 inches. Information and prices upon application.

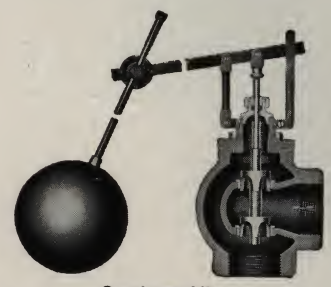
Valves with cast steel bodies or alloy trim on request.

No. 27 Klipfel Balanced Float Valves

Angle and Globe Patterns

This valve is generally used to control the supply of cold water to open tanks, so as to maintain automatically a practically constant water level. The standard inner valve consists of two balanced discs; on special order a double seated inner valve will be furnished. The swivel yoke can be rotated to any position and the angle and length of the float rod is adjustable at the rosette. The float is seamless copper. In sizes 1½ inches and smaller the bodies are bronze with bronze trim. Larger sizes have semi-steel bodies and bronze trim. Being of all metal construction, these valves are suitable for hot or cold water, oil and other ordinary liquids. When made of suitable metals they can be used for various chemicals.

When ordering, state valve number, pipe size, whether angle or globe pattern, style of ends, water pressure and whether for hot or cold water.



Sectional View
Screwed Ends, Angle

Made in sizes up to 20 inches inclusive. Prices and dimensions on request.

Size In.	Screwed Std. Each	Flanged Std. Each	Flanged Ex. Hvy. Each
⅜–½	$30.00	.....	.....
¾	30.00	.....	.....
1	35.00	.....	.....
1¼	38.00	.....	.....
1½	45.00	.....	.....
2	50.00	$55.00	$60.00
2½	65.00	70.00	75.00
3	80.00	85.00	90.00
3½	95.00	100.00	105.00
4	110.00	115.00	120.00
5	160.00	165.00	175.00
6	190.00	195.00	205.00
7	.....	270.00	295.00
8	.....	305.00	330.00
10	.....	390.00	415.00

No. 62 is the same valve minus the float equipment, for hand or mechanical operation. Prices on request.

Fisher Seamless Ball Floats

Perfect spherical floats, spun of uniform wall thickness and of a metal of highest quality, electrically fusion welded, and polished.

All floats are furnished with hexagon spud with ⅜-inch female pipe thread for attaching to float rod. Floats are reinforced internally with extra wall thickness at point where spud is welded to float.

When ordering, specify size, kind of metal, the service, pressure, temperature, and kind of liquid.

Plain Copper

Diam. Float.....in.	6	*7¾	†9¾	12
Open Tank Service.....each	$4.00	$5.00	$10.00	$18.00
25-Lb. Service.....each	5.00	8.00	15.00	24.00
125-Lb. Service.....each	11.00	16.00	.....	.....
250-Lb. Service.....each	18.00	28.00	.....	.....

Stainless Steel

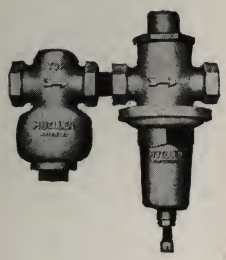
Diam. Float.....in.	6	*7¾	†9¾	12
Open Tank Service.....each	$16.00	$21.00	$32.00	$67.50
25-Lb. Service.....each	16.00	21.00	32.00	67.50
125-Lb. Service.....each	16.00	21.00	32.00	67.50
250-Lb. Service.....each	16.00	22.50	32.00	75.00
600-Lb. Service.....each	18.00	25.00	35.00	75.00

*Referred to as 8 inch. †Referred to as 10 inch.

When Ordering

please refer to the sizes and numbers shown in this book. It will help us in filling your order accurately.

No. 9000 Mueller Water Reducing and Regulating Valves



This valve is suitable for reducing pressures on cold water services from a maximum of 250 pounds to a delivery pressure of 20 to 75 pounds. By giving the No. 9000 a full seat opening and equipping it with a special reinforced rubber diaphragm, a valve has been produced that will give a maximum flow of water, close regulation and continued efficient service.

This valve will maintain a steady pressure at the faucet regardless of the pressure at the inlet side. All working parts are easily accessible. It is not necessary to remove the valve from the line if replacements become necessary.

Any properly working regulator acts as a check valve. A reliable relief valve should be installed in connection with the regulator in every case where the building up of the pressure from any cause is to be avoided.

In ordering, give the following information: Highest and lowest initial pressure in pounds; required low, or delivery pressure, size of valve desired, and, if possible, approximate quantity volume to be used per minute.

Size In.	Approx. Shipping. Wt. Lbs.	Each	Size In.	Approx. Shipping Wt. Lbs.	Each
1/4	2 3/4	$17.28	1 1/4	48	$54.00
3/8	5 1/4	18.00	1 1/2	73	72.70
1/2	8	18.00	2	114	105.30
3/4	12	19.36	2 1/2	200	136.00
1	18	31.14	...	...	.....

No. 9080 Mueller Single Seat Reducing and Regulating Valves

For Steam and Oil

This valve is especially designed for use where large reductions are to be made and where slight variations in delivery pressure are permissible.

Standard valves have iron bodies, iron diaphragm chambers, phosphor bronze diaphragms and all interior working parts of bronze. Stock valves are suitable for initial pressure up to 200 pounds and delivery pressures up to 125 pounds. Wherever the initial or delivery pressure exceeds these amounts, valves will be made with bronze bodies.

Furnished complete with strainer as illustrated, unless otherwise specified.

Size In.	Ship. Wt. Lbs.	Price Each	Size In.	Ship. Wt. Lbs.	Price Each
1/4	6 3/4	$17.28	1	17 1/2	$31.14
3/8	10 1/2	18.00	1 1/4	25 3/4	51.30
1/2	11 1/2	18.00	1 1/2	32 1/2	70.56
3/4	13 3/4	19.36	2	53 1/2	102.42

No. 11 Mason Reducing Valves

For Steam Service—Internal Pilot Operated Type

Bronze Body

For controlling saturated or superheated steam. Has wide range of adjustment, unaffected by fluctuating initial pressures or demand; sensitive auxiliary operation; and downstream connection.

When ordering, the reduced pressure must be specified. Initial pressure must exceed reduced pressure by at least 20 pounds.

Iron Body

Bronze Body Stainless Steel Trim—Screwed Connections
Up to 250 Lb. Initial or Inlet Pressure M.S.S.
5 to 75 Lb. or 75 to 225 Lb. Reduced Pressure Ranges

High pressure steam bronze body; stainless steel auxiliary valve, main valve, and seats; bronze piston with iron rings.

Size.....inches	1/2	3/4	1	1 1/4	1 1/2	2
Each.....	$32.00	32.00	44.00	55.00	75.00	96.00

Iron Body—Stainless Steel Trim—Extra Heavy Flanged
Up to 250 Lb. Initial or Inlet Pressure A.S.A.
5 to 75 Lb. or 75 to 225 Lb. Reduced Pressure Ranges

Flanges are faced and drilled. Stainless steel auxiliary valve, main valve, and seats; bronze piston with special iron rings and bronze liner.

Size.....inches	2 1/2	3	4
Each.....	$110.00	140.00	220.00

Steel Body—Stainless Steel Trim—300, 400, 600 Lb. A. S. A. Flanges

Available in sizes 1/2 to 4 inches. Flanges are faced and drilled. Heat-treated working parts including liner of stainless steel, machined and ground to fixed tolerances according to pressure and temperature specified.

Prices upon request.

Parts for No. 11 Mason Reducing Valves

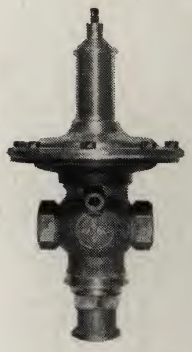
We can furnish parts for any MasoNeilan Valves shown in this catalog.

Good Will and Customers

Sincerely we hope to make each transaction with you a further bond of good will between us.

No. 12 Mason Bronze Reducing Valves

With Large Diaphragm



For reduced pressure up to 15 pounds. The diaphragm having a large area to be acted upon by the reduced pressure, provides ample power to move auxiliary valve and also renders the action of the valve very sensitive to the slightest change of reduced pressure; unaffected by fluctuating pressure or demand.

Furnished with renewable, bronze trim.

Size, In.	Each	Size, In.	Each
½	$44.00	1¼	$65.00
¾	44.00	1½	85.00
1	54.00	2	106.00

No. 12 Mason Iron Body Reducing Valves

With Large Diaphragm

Flanged Ends

For Reduced Pressures up to 15 Pounds
For Initial Pressures up to 250 Pounds

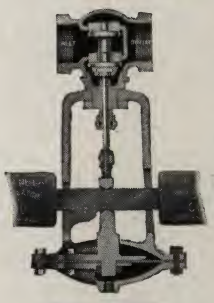
This valve with large diaphragm is very sensitive and is especially adapted to control steam to low pressure systems where close regulation is desired, as on heating systems, etc.

Has stainless steel trim.

Size Inches	Each	Face to Face Inches	Diam. Flange Inches
2½	$120.00	12	7½
3	150.00	13	8¼
4	230.00	14	10

No. 236—AS Masoneilan Reducing Valves

Weight and Lever Type—Steam Service



Bronze Body

Designed for controlling steam to heating and other low pressure systems of either the pressure or vacuum type. Recommended for heating or other low pressure systems where the boiler or initial pressure may at times fall to or below the reduced pressure carried on the systems.

Special moulded rubber diaphragms with one or more ply of fabric insertions are supplied.

Adjustment is made by varying the amount of weights on the lever or changing the position of the weights to obtain desired reduced pressure.

Bronze Body—Bronze Trim

Maximum Working Pressure 150 Lb. at 350°F.

Reduced Pressure Range:

No. 5 Case, 8–40 Pounds			No. 9 Case, ½–10 Pounds		
Size In.	No. 5 Case Screwed Each	No. 9 Case Screwed Each	Size In.	No. 5 Case Screwed Each	No. 9 Case Screwed Each
½	$26.00	$26.00	1¼	$31.00	$31.00
¾	27.00	27.00	1½	34.00	34.00
1	28.00	28.00	...	.....	.....

Iron Body—Bronze Trim

Maximum Working Pressure 125 Lb. at 350°F.

Reduced Pressure Range: No. 5 Case, 8–40 Lb.; No. 9 Case, 3–10 Lb.; No. 12 Case, ½–3 Lb.; No. 16 Case, ½–3 Lb.

	No. 5 Case		No. 9 and 12 Case		No. 16 Case
Size In.	Screwed Each	Std. Wt. Flanged Each	Screwed Each	Std. Wt. Flanged Each	Std. Wt. Flanged Each
2	$39.00	$43.00	$46.00	$50.00	.....
2½	44.00	48.00	51.00	55.00	.....
3	.....	60.00	.....	67.00	.....
4	.....	84.00	.....	91.00	.....
5	.....	.....	.....	*108.00	$108.00
6	.....	.....	.....	*125.00	125.00
8	.....	.....	.....	*204.00	204.00

*Only in No. 12 Case, reduced pressure range 2-10 pounds.

Capacities of Nos. 11 and 12 Mason Internal Pilot Operated Reducing Valves

Valve Capacities—Pounds of Saturated Steam per Hour

Initial or Boiler Pressure Pounds	Reduced Pressure Pounds	Valve Size, Inches ½	¾	1	1¼	1½	2	2½	3	4
25	5	143	275	410	780	1105	1790	2600	3575	7150
50	5 to 30	230	455	645	1205	1790	2860	4225	5850	11375
75	5 to 45	295	610	845	1690	2440	3900	5850	8125	15600
	55	275	520	780	1465	2080	3380	5135	7150	13000
100	5 to 60	540	780	1140	2210	3185	5040	7800	10400	19500
	80	305	610	845	1625	2405	3900	5850	8125	15275
150	5 to 90	585	1140	1625	3120	4550	7150	11050	15275	29250
	120	455	845	1300	2440	3510	5525	8450	11700	22100
	130	390	780	1105	2080	2990	4875	7475	9750	18850
200	5 to 120	715	1465	2115	4160	5850	9100	14300	19500	37050
	160	570	1105	1625	3120	4550	7800	11375	15600	30550
	180	455	845	1235	2405	3510	5655	8450	11700	22100
250	5 to 150	910	1820	2730	5040	7150	11700	17875	24375	48100
	200	715	1430	2015	3900	5525	9100	13650	18200	35750
	230	475	910	1365	2600	3900	6175	9100	12350	24375

A low pressure or downstream connection must be used in order to obtain these capacities.

Pipe Capacities—Pounds of Saturated Steam per Hour

Length of pipe is equivalent to 240 diameters. Capacities are based on a pressure drop of 2 pounds per 240 pipe diameters.

Pounds Pressure (Gauge)	Standard Pipe Size, Inches ½	¾	1	1¼	1½	2	2½	3	4
5	61	113	198	388	550	966	1423	2378	4352
10	68	125	219	431	610	1072	1580	2641	4832
15	74	136	238	469	665	1168	1720	2875	5262
20	80	148	256	504	714	1256	1850	3091	5655
25	85	156	273	537	761	1336	1968	3290	6020
30	89	165	288	567	804	1412	2081	3478	6364
40	99	182	316	624	884	1552	2286	3820	6991
50	106	197	343	674	955	1678	2472	4132	7560
60	114	210	366	721	1022	1796	2645	4422	8090
70	120	223	389	765	1084	1906	2806	4691	8586
80	126	235	410	805	1143	2008	2958	4943	9044
90	132	239	432	845	1205	2104	3097	5175	9510
100	141	258	450	880	1256	2189	3232	5396	9900
125	151	284	494	972	1376	2414	3545	5939	10626
150	156	293	510	1001	1425	2492	3669	6117	11241

For pressures over 150 pounds, extra heavy pipe should be used which reduces the capacity proportionately.

How to Use the Tables

Example: No. 11 Reducing Valve. Boiler pressure, 100 pounds; reduced pressure to be carried on low pressure system, 5 pounds. Size of pipe line, 2 inches; rated capacity of pipe at 5 pounds pressure, 966 pounds per hour (see table of Pipe Capacities). Nearest size of reducing valve to handle rated capacity of pipe, reducing from 100 to 5 pounds, is one inch (see table of Valve Capacities), maximum capacity 1140 pounds per hour.

No. 33 Masoneilan Reducing Valves

Diaphragm Type—For Steam, Oil or Air Service

200 Lb. Maximum Working Pressure

For small systems where a tight closing valve is required. Compact, lightweight, easily set and accurate. Enclosed spring case with removable cap. Metal diaphragm for steam service; rubber diaphragm for air service; or bellows for oil, gas and steam service.

Reduced pressure ranges: 2–20, 20–40 and 40–100 pounds.

Made of bronze with bronze trim.

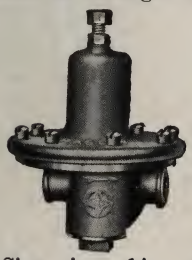
Line Size in.	⅛	¼	⅜	½	¾
Each.....	$23.	23.	24.	25.	27.
Ship. Wt..lb.	8	8	8½	9	10

No. 227 MasoNeilan Bronze Body Reducing Valves

Water Service

150 Pounds Maximum Working Pressure

To regulate water pressure where the city or other pressure is too high for economical and convenient use. Will maintain even pressures of water between 10 and 60 pounds from service pressures up to 150 pounds. Will shut off tight and can be used for dead-end service. Stops noises and splashing from faucets.



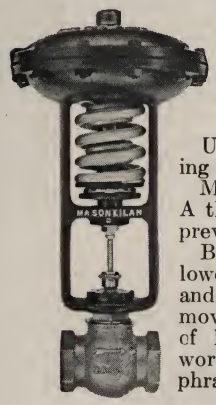
Reduced pressure range, 10 to 60 pounds, sizes ¼ to 1 inch; 10 to 40, 30 to 60 pounds, sizes 1¼ to 2 inches.

Renewable composition disc. Rust proof steel spring and cap-screws.

Size...in.	¼	½	¾	1	1¼	1½	2
Each....	$9.00	13.00	14.00	16.00	43.50	45.75	51.00

No. 505-S Masoneilan Reducing Valves and Pump Pressure Regulators

Direct Operated Spring Type—Steam Service



Used to reduce saturated steam for heating systems and process work.

Multiple springs assure good regulation. A thrust ball bearing carries spring load, prevents false pressure setting.

Ball bearing guides at the upper and lower ends of spring rod minimize friction and provide for proper alignment of the moving parts. Bronze or cast iron bodies of highest grade material with bronze working parts. Special moulded rubber diaphragms with fabric insertions.

Bronze Body, Bronze Trim

Maximum Working Pressure 150 Lb. M.S.S.

Reduced Pressure Range:
No. 4 Case, 60–160 Pounds; No. 5 Case, 20–75 Pounds;
No. 7 Case, 6–25 Pounds; No. 9 Case, ¾–3 and 2–8 Pounds

Size In.	Nos. 4, 5, and 7 Cases Screwed Each	No. 9 Case Screwed Each	Size In.	Nos. 4, 5, and 7 Cases Screwed Each	No. 9 Case Screwed Each
½	$31.00	$37.00	1¼	$35.00	$41.00
¾	32.00	38.00	1½	38.00	44.00
1	33.00	39.00	...	.....	.....

Iron Body, Bronze Trim

Maximum Working Pressure 125 Lb. A.S.A.

Reduced Pressure Range: No. 4 Case, 60–160 Pounds;
No. 5 Case, 20–75 Pounds; No. 7 Case, 6–25 Pounds;
No. 9 Case, 2–8 Pounds; No. 11 Case, ¾–3 Pounds

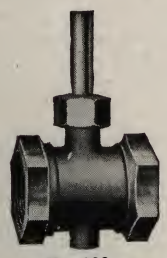
Size In.	Nos. 4, 5 and 7 Cases Screwed Each	Nos. 4, 5 and 7 Cases Std. Wt. Flanged Each	No. 9 Case Screwed Each	No. 9 Case Std. Wt. Flanged Each	No. 11 Case Screwed Each	No. 11 Case Std. Wt. Flanged Each
2	$44.00	$48.00	$50.00	$54.00	$56.00	$60.00
2½	49.00	53.00	55.00	59.00	61.00	65.00
3	.....	65.00	.....	71.00	.....	77.00
4	.....	89.00	.....	95.00	.....	101.00
6	.....	124.00	.....	130.00	.....	136.00

Brass Butterfly Valves

Brass Body—Brass Disc—Steel Stem

Screwed Ends

For 125 Pounds Steam Working Pressure
For 200 Pounds Cold Water, Oil, or Gas Working Pressure



No. 822

These valves are not intended to be steamtight. They should be used only to control or regulate flow.

Size Inches	Each	End to End Inches
¾	$4.20	2¼
1	6.00	2 9/16
1¼	7.70	2¾
1½	9.00	2 15/16
2	13.50	4 1/16
2½	18.50	4⅜
3	28.00	5 3/16

Iron Body Butterfly Valves

For 125 Pounds Steam Working Pressure

No. 823

These valves are not intended to be steam tight.

Size In.	Screwed Each	Flanged Each	Size In.	Screwed Each	Flanged Each
2	$8.00	$9.50	6	$42.50	$47.00
2½	9.50	11.50	8	.....	90.00
3	12.00	15.00	10	.....	125.00
3½	16.00	19.00	12	.....	160.00
4	18.50	22.00	14	.....	275.00
5	28.50	32.00	16	.....	350.00

Can be furnished with a brass stem instead of steel stem, at an extra price.

Brass Throttle Valves

For 125 Pounds Steam Working Pressure

No. 824

Size Inches	Price Each Screwed	Size Inches	Price Each Screwed	Size Inches	Price Each Screwed
¾	$13.50	1¼	$19.00	2	$34.00
1	15.50	1½	27.00	2½	47.00

Schaefer By-Pass Valves

Standard Pattern for 150 Pounds Steam Working Pressure
Extra Heavy Pattern for 300 Pounds Steam Working Pressure

Used when installing traps, reducing valves, temperature control valves, pump governors, and regulators. Eliminates at least 12 threaded joints on every by-pass.

Has renewable seats and discs. Disc holder permits inserting discs of various materials such as copper, steam metal, lead, leather, vulcanized composition, etc.

Unless otherwise specified standard pattern valve is fitted with vulcanized composition discs. Standard pattern has hard bronze renewable seats.

Extra heavy pattern embodies all features of standard valve and is furnished with steam metal discs unless otherwise specified. Extra heavy pattern is furnished with renewable seats of monel metal.

The cone disc has been designed to meet the demand for an all metal valve still retaining the advantages possessed in the renewable disc holder.

Size Inches	Standard Pattern Each	Standard Pattern Overall End to End Inches	Extra Heavy Pattern Each	Extra Heavy Pattern Overall End to End Inches	C. to C. Union Outlets Inches
½	$15.00	11 15/16	$31.50	12 3/16	9
¾	20.00	12½	37.00	12⅝	9
1	29.00	16⅛	46.00	16⅜	12
1¼	43.00	17⅝	60.00	17⅞	13
1½	55.00	19⅜	90.00	19⅝	14
2	66.00	21¼	105.00	21⅜	15

Cast Iron Blow-Off Basins

Gravel and Drainage Catch Basins

Not for Pressure

Diam. Inches	Depth Inches	Weight Pounds	Each	Diam. Inches	Depth Inches	Weight Pounds	Each
16	16	190	$35.50	30	36	775	$136.80
	20	240	39.00		42	825	150.40
	24	250	43.00		48	890	164.20
	30	285	48.80		54	955	177.90
18	18	250	43.00		60	1020	191.35
	24	280	49.60	36	36	990	177.60
	30	330	56.00		42	1150	194.00
	36	390	64.00		48	1265	210.00
	42	460	73.60		54	1385	226.00
20	20	320	49.60		60	1470	242.00
	24	340	55.00		72	1765	288.00
	30	375	60.80	42	42	1480	236.80
	36	460	70.40		48	1580	252.80
	42	545	80.00		54	1675	268.00
24	24	490	76.00		60	1770	283.20
	30	540	86.40		72	2050	328.00
	36	605	96.80	48	48	2045	325.50
	42	665	106.40		54	2180	350.00
	48	725	116.00		60	2325	373.80
	60	845	135.20		66	2535	395.50
30	30	690	123.00		72	2725	420.00

Steel Gravel Basins and Blow-Off Receivers

A.S.M.E. Code, 100, 125, and 150 Pounds Working Pressure

Safe working pressure. The blow-off receiver is guaranteed to pass the requirements of the various states regulating its installation such as Michigan, Illinois and several others.

Prices complete, including pipe inside of tank.

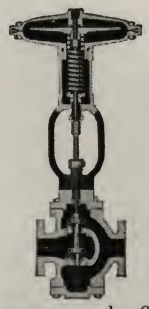
Larger sizes also furnished.

Diam. In.	Lgth. In.	100 Lbs. W.P. Ship. Wt., Lbs.	Price Each	125 Lbs. W. P. Ship. Wt., Lbs.	Price Each	150 Lbs. W.P. Ship. Wt., Lbs.	Price Each
16	24	200	$106.00	200	$108.00	210	$112.00
18	24	240	108.00	240	110.00	260	112.00
18	30	270	110.00	270	112.00	290	118.00
20	24	270	110.00	280	114.00	290	120.00
20	30	310	114.00	320	118.00	330	126.00
20	36	340	116.00	350	120.00	360	128.00
24	30	480	122.00	490	128.00	510	136.00
24	36	520	126.00	530	130.00	550	140.00
24	42	550	130.00	560	132.00	580	142.00
24	48	590	132.00	600	136.00	620	144.00
30	30	625	145.00	625	146.00	660	150.00
30	36	675	152.00	675	152.00	710	156.00
30	42	725	154.00	725	156.00	760	162.00
30	48	775	162.00	775	162.00	810	168.00
36	36	850	184.00	900	190.00	1050	216.00
36	42	950	194.00	1000	200.00	1170	230.00
36	48	1050	205.00	1100	212.00	1300	240.00

Basins 30-inch diameter and smaller have 2-inch inlet, 3-inch outlet, 2-inch vent; basins 36-inch diameter have 3-inch inlet, 4-inch outlet, 3-inch vent.

No. 57 Fisher Constant Pressure Pump Governors

Diaphragm Actuated—Spring Controlled Globe or Angle Pattern



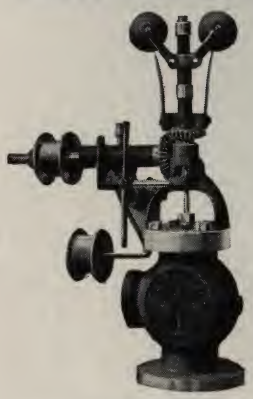
Suitable for controlling steam driven pumps, operating on closed systems. It may also be used on certain types of steam driven air compressors. Controls steam supply, maintaining the constant discharge or service pressure for which it is adjusted.

The use of various sizes of diaphragm and spring combinations makes this governor suitable for any discharge pressure from 5 to 100 pounds. Particularly suited for low pressure pumps. No one size of diaphragm and spring combination will give the above range. Advise with order the minimum and maximum discharge pressure so that governor can be fitted with proper control mechanism.

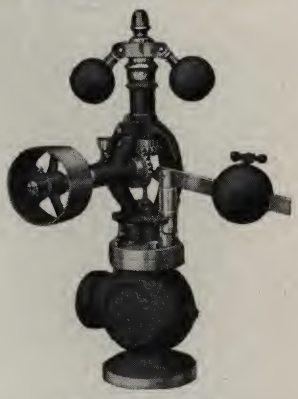
Simple screw adjustment enables operator to change discharge pressure as desired.

Pipe Size In.	High Tensile Iron Body, Duromite Bronze or Nickel — Iron Trimmed — Scrd. Each	Flanged — Std. Each	Flanged — Ex. Hvy. Each	High Tensile Iron Body, Stainless — Steel Trimmed — Scrd. Each	Flanged — Std. Each	Flanged — Ex. Hvy. Each	Cast Steel Body Stainless Steel Trimmed — Scrd. Each	Flanged — Series 15, 30 or 40 Each	Flanged — Series 60 Each
½–¾	$50	$55	$60	$70	$75	$80	$110	$140	$140
1	55	60	65	75	80	85	120	140	140
1¼	60	65	70	80	85	90	130	150	150
1½	65	70	75	90	95	100	145	170	170
2	75	80	85	100	105	110	175	185	185
2½	90	95	100	120	125	130	...	220	220
3	105	110	115	135	140	145	...	270	270
4	...	140	150	...	200	210	...	335	365
5	...	165	185	...	250	270	...	440	480
6	...	200	225	...	290	315	...	530	585

Class A Gardner-Denver Engine Governors



Spring Governor



Standard Governor

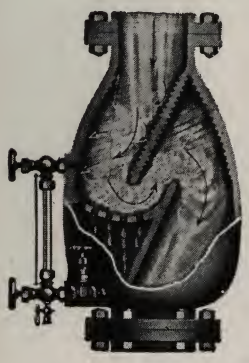
The standard governor is of the gravity action type, especially adapted for larger stationary engines. Speed is varied by position of a weight on the lever. Has automatic safety stop.

The spring governor is recommended for traction and high speed stationary engines. It is quick and sensitive in action and therefore capable of responding promptly to various changes in load.

As regularly furnished, the 1¼-inch size and smaller have screwed side and base; 1½ and 2-inch have screwed side and flanged base; larger sizes have flanged side and base. Other style valve chambers can be furnished.

Spring — Size Inches	Spring — Each	Standard — Size Inches	Standard — Each	Standard — Size Inches	Standard — Each
½	$28.00	2	$53.00	6	$242.00
¾	30.00	2½	71.00	..	.....
1	32.00	3	88.00	8	425.00
1¼	37.00	3½	107.00	10	601.00
1½	44.00	4	132.00	..	.....
2	53.00	5	193.00	..	.....

Type A Wright-Austin Vertical Steam Separators



Designed for installation in vertical steam lines just above throttle of engine.

Baffle is so set that when the incoming steam is impinged against it and rebounds to opposite wall of separator, particles of moisture are deflected down deep, slanting corrugations on walls and baffle into well below.

Made of cast semi-steel.

This separator is regularly made with flanges for working pressures to 250 lbs. per square inch. Can be supplied with flanges faced and drilled to 125-pound standard drilling, if so ordered, at same price.

Also made in cast steel for superheat. Prices quoted upon receipt of pipe size, working pressure, and degrees of superheat.

Pipe Size Inches	Each	Diam. Flanges Extra Heavy 250 Lbs. Inches	Face to Face Inches	Diam. Separator Inches	Drain Inches	Wt. Lbs.
*1½	$27.50	Scrd.	11	7	½	40
*2	32.50	Scrd.	11	7	½	40
2½	44.00	7½	13¼	8	¾	60
3	48.00	8¼	15½	9	¾	85
3½	54.00	9	16¾	10	¾	110
4	65.00	10	18	11	¾	190
5	92.00	11	22¼	13	1	210
6	120.00	12½	25¼	15	1	300
8	220.00	15	31½	19	1¼	500
10	310.00	17½	37	23	1½	850
12	370.00	20½	40¼	25½	1½	1080

*Available with flanged ends, 1½", $32.00; 2", $37.00.

Prices do not include water gauge, companion flanges, or drain valve.

Type B Wright-Austin Horizontal Steam Separators

For limited headroom.

Corrugations or grooves on baffle slant downward at an angle forming a junction with other grooves on inside walls of separator, draining condensation directly into well below.

Of cast semi-steel.

Regularly made with flanges for working pressures to 250 pounds per square inch.

Can be supplied with flanges faced and drilled to 125-pound standard drilling, if so ordered, at same price as 250 pound.

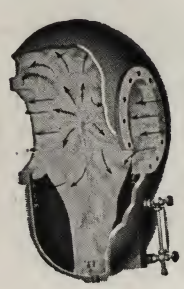
Also made in cast steel for superheat. Prices quoted upon receipt of pipe size, working pressure, and degrees of superheat.

Pipe Size Inches	Each	Diam. Flanges 250 Lbs. Inches	Face to Face Inches	Center Line of Flanges to Bottom Inches	Drain Inches	Wt. Lbs.
*1½	$23.00	Scrd.	9¼	9	½	45
*2	26.00	Scrd.	9¼	9	½	45
2½	34.00	7½	13¼	12	¾	80
3	41.00	8¼	15¼	13	¾	110
3½	51.00	9	16	14	¾	130
4	63.00	10	18½	15	¾	165
5	81.00	11	21	20¾	1	270
6	122.00	12½	24¼	22	1	400
8	216.00	15	30¼	29	1¼	775
10	288.00	17½	31	36	1½	1150
12	400.00	20½	36	40	1½	1580

*Available with flanged ends, add $4.00 to above prices.

Prices do not include water gauge, companion flanges, or drain valve.

Type S Wright-Austin Horizontal Self-Cleaning Oil Separators



An excellent device for purification of exhaust steam. Suitable for use on exhaust steam lines from engines, pumps, compressors, etc. Manufacturers' guarantee provides for such elimination of oil, grease, and impurities that condensation may safely be used as distilled water for boiler feed, ice making, textile and chemical processes, laundries, or any other purpose for which either exhaust steam or purified condensation may be employed. Also efficient as a catch-all and for elimination of moisture and oil from low pressure vapor, gas, and air. Suitable for pressures up to 50 pounds per square inch.

Designed so that incoming steam, with oil in suspension, strikes a large circular baffle with deep corrugations. Small particles of oil and condensate carried along with steam velocity are dashed into grooves and separated from steam, which being lighter is easily diverted around baffle, while oil and condensate flows down grooves into bottom of separator.

Ample area is provided for free passage of steam all around baffle, on top and all sides, thus spreading out steam into a comparatively thin volume or layer. Small particles of oil and condensate easily pass through the thin layer and are not picked up again by steam. Has large internal area; will not produce back pressure.

Just inside inlet of separator is a trough for catching oil carried along bottom of pipe. From this trough a drain leads to bottom of separator. On rim of baffle is a large deep shoulder to catch any oil that may possibly have been carried across face of baffle. Further on, an inner flange or ring is cast just inside outlet which will absolutely prevent escape of any oil that might still adhere to walls of separator.

Small sizes are made in one solid casting and larger sizes are welded steel construction. There are no parts to become loose or misplaced, and no joints or gaskets, so it will not leak. No oil can accumulate on baffle as it is continuously flushed clean by force of hot condensate, making separator self cleaning.

Size Inches	Each	Diam. Flange Inches	Face to Face Flange Inches	Width Inches	Height Inches	Size Drain Inches	Wt. Lbs.
1½	$24.00	Scrd.	10	12	15½	¾	65
2	27.00	Scrd.	10	12	15½	¾	70
2½	42.00	7	10¼	14½	17⅞	1	100
3	48.00	7½	10½	15	18	1	120
3½	54.00	8½	11	17	20	1	175
4	72.00	9	12⅜	19	23	1	200
5	100.00	10	15½	23	27	1¼	315
6	122.00	11	17½	25	30	1½	400
8	170.00	13½	18½	29	36	1½	620
10	228.00	16	19	32	40	1½	800
12	300.00	19	20	34	42	1½	900

Can be furnished in sizes up to 48 inches.

Prices include water gauge (except 1½ and 2 inch) but not companion flanges.

Swartwout Cast Iron Exhaust Pipe Heads

The long pitch of the helix avoids interference with the direct-flow action. As the whirling stream emerges from the helix tube into the expanding portion of the head, the water particles which have been thrown into the outer surface of the tube are flung far outward. Water collects in the annular chamber formed by the extension of the tube, and is removed through the drip. There are no baffle plates or any back pressure.

These exhaust heads are the simplest practical embodiment of the helico-centrifugal principle.

Sizes 5-inch and smaller are tapped; larger sizes are flanged. All flanges are faced and drilled 125 pound standard.

Exhaust Pipe Inches	Price Each	Exhaust Pipe Inches	Price Each	Exhaust Pipe Inches	Price Each
1 or 1¼	$25.00	4½	$45.00	14	$190.00
1½	25.00	5	50.00	16	230.00
2	30.00	6	60.00	18	300.00
2½	30.00	7	75.00	20	360.00
3	35.00	8	90.00	24	730.00
3½	35.00	10	115.00	30	1400.00
4	45.00	12	155.00	..	.....

Companion flanges furnished at additional cost.

Model KDP Lonergan Bronze Pop Safety Valves

A.S.M.E., Top Outlet

This valve is made with high lift, equalizing top and bottom spring steps, steel spindles, powerful cam lifting lever, outside adjustable blow down ring. It complies in every way with the A.S.M.E. Code.

Fitted for seal or lock. Locks are extra.

Always state pressure at which valve is to be set.

Size Inches	Each Semi-Finished	Each Finished	Size Inches	Each Semi-Finished	Each Finished
½	$8.00	.....	1½	$15.00	.....
¾	8.00	.....	2	23.00	.....
1	10.00	.....	2½	38.00	.....
1¼	12.00	.....	3	65.00	.....

Model ODP Lonergan Bronze Pop Safety Valves

A.S.M.E. Side Outlet

For 300 Pounds Pressure

For use where it is necessary to pipe the outlet away. For stationary, portable and marine boilers. State pressure at which valve is to open.

Size In.	Semi-Fin. Each	Fin. Each	Max. Hp.	Ht. Over All In.	Ctr. to End In.	Ctr. to Outlet In.	Pipe Size In.	Wt. Lb.
½	$10.00	$11.00	6	6	2¼	1 3/16	½	1⅜
¾	10.00	11.00	8	6 9/16	2½	1 7/16	¾	1⅝
1	12.00	13.00	10	7¾	2⅞	1⅝	1	3
1¼	15.00	16.00	20	8¾	3⅝	1 13/16	1¼	4½
1½	18.00	19.00	30	9 5/16	3 11/16	2¼	1½	5
2	27.00	29.00	40	12⅛	4⅜	2⅝	2	9¾
2½	43.00	46.00	75	13⅝	5¾	3 3/16	2½	16
3	72.00	77.00	100	16⅛	6 11/16	3¾	3	23

Model HHD Lonergan Brass Pop Safety Valves

A.S.M.E., House Heating Boiler

This valve is designed to meet and conform to the A.S.M.E. Code.

Standard pressures are 5, 10 and 15 pounds.

The pressure cannot be changed after the valve is set at the factory.

Made of brass, semi-finished.

Size..inches	¾	1	1¼	1½	2	2½	3
Each.....	$5.25	6.00	6.75	8.25	11.25	26.00	37.50

Model HHS Lonergan Pop Safety Valves

Side Outlet

For 5, 10 or 15 Pounds Pressure

For use on house heating boiler. Meets A.S.M.E. specifications. Pressure cannot be changed after valve is set at factory.

Kindly state pressure at which valve is to open.

Size Inches	Semi-Finished Each
¾	$7.25
1	8.00
1¼	9.75
1½	11.25
2	14.25
2½	30.00
3	40.50

Model WTE Lonergan Pop Safety Valves

Exposed Spring—Iron Body—Bronze Mounted

A.S.M.E. Standard, Saturated Steam Pressure 250 Pounds

For use on water tube boilers but can be used on all types of boilers.

Positive in action; opens promptly and closes gradually.

Has screwed outlet; screwed or flanged inlet for 6⅛, 6½, 7½ and 8¼-inch; flanged inlet for 9, 10, 10½, 11 and 12½-inch sizes.

In ordering, state pressure at which valve is to open.

Size Inches	Bronze Seat Each	Nickel Seat Each	Height Overall Inches
1½	$30.00	$35.00	17⅝
2	35.00	40.00	18
2½	42.00	48.00	20⅛
3	50.00	57.00	23½
3½	68.00	75.00	25½
4	75.00	87.00	25⅜
4½	100.00	115.00	26 11/16
5	120.00	135.00	31 1/16
6	170.00	190.00	34⅜

Can be furnished flanged outlet at slight additional cost.

Model WTN-EL Lonergan Pop Safety Valve

Cast Steel Body—Chrome Nickel Alloy Trim

For 450 Pounds Pressure at 650°F.

A top-guided, high capacity, exposed spring safety valve for steam, air, and gas service. Conforms to A.S.M.E. code standards.

In accordance with recommended boiler safety valve standards, this valve has Series 60 A.S.A. inlet flange, raised face, serrated gasket surface; and Series 15 A.S.A. outlet flange.

Furnished in the following inlet and outlet sizes: 1½x2, 2x3, 2½x3½, 3x4, 4x6 and 6x8 inches.

For higher pressure and temperatures, other models are available.

Prices on application.

Model WT Lonergan Pop Safety Valves

Iron Body—Bronze Mounted

Designed primarily for use on water tube boilers but is an efficient safety valve on all steam service systems up to 250 pounds pressure and 450°F.

Positive in action; opens promptly and closes gradually.

Furnished with 250-pound A.S.A. standard flanged inlet in all sizes; screwed outlets for sizes up to and including 3 inch; 125-pound A.S.A. standard flanged outlet in 4- and 6-inch sizes

Size In.	Bronze Seat Each	Nickel Seat Each	Diam. Flange In.
1½	$30.00	$35.00	5
2	35.00	40.00	6
2½	42.00	48.00	7
3	50.00	57.00	7½
4	75.00	87.00	9
6	170.00	190.00	11

Model T Lonergan Bronze Relief Valves

For Liquids and Gases

Body-Outlet Marine Type—Screwed Inlet & Outlet

300 Pounds per Square Inch Service Pressure Limit

Used for protecting pressure systems against runaway or excessive pressures. Recommended for water lines, fire engine pumps, lube lines, steam pumps, and similar services. Can be supplied with popping chamber for steam, air, or gas service.

An effective snifter or cylinder relief valve. Outlet in body casting allows valve mechanism to be removed or reseated without disturbing outlet piping. Compact construction, low head-room requirement, simple and extremely strong and durable. Springs are of large diameter and extra long, providing generous relieving capacity and long life.

Size..inches	½ or ¾	1	1¼	1½	2	2½	3
Each.....	$10.00	12.00	15.00	18.00	27.00	43.00	72.00

Model VAK Lonergan Special Valves for Vacuum Breaking

Size Inches	Each Semi-Finished	Each Finished	Each Nickel-Plated
½	$8.00	$9.00	$10.00
¾	8.00	9.00	10.00
1	10.00	11.00	12.00
1¼	12.00	13.00	14.00
1½	15.00	16.00	18.00
2	23.00	24.00	27.00

Model U Bronze Snifter, Water or Cylinder Relief Valves

To be used on cylinders of steam engines, etc., to prevent an injection of water from blowing off the cylinder head.

Size In.	Price, Each Semi-finished	Semi-fin. N. P.	Finished	Nickel-plated
½, ¾	$10.00	$11.00	$11.00	$12.00
1	12.00	13.00	13.00	14.00
1¼	15.00	16.00	16.00	18.00
1½	18.00	19.00	19.00	22.00
2	27.00	29.00	29.00	32.00
2½	43.00	46.00	46.00	50.00
3	72.00	77.00	77.00	85.00
3½	95.00	105.00	105.00	115.00
4	120.00	135.00	135.00	150.00

Furnished with female inlet at a small extra charge; flanged inlet and outlet extra charge. Specify pressure for blow-off.

Model HU Lonergan Water Relief Valves

Underwriters' Type

Iron Body Bronze Mounted

For Working Pressures up to 300 Pounds

For use on pumps, hydraulic elevators, pipe lines, water works, etc. Handwheel regulates opening pressure.

Side outlet, screwed.

Size In.	Each	Base Flange Diam. In.	Ctr. of Side Outlet to Base In
2½	$55.00	7½	5
3	65.00	8¼	5 3/16
3½	85.00	9	5½
4	100.00	10	5⅞
5	150.00	11	6 11/16
6	225.00	12½	7⅜

This valve can be furnished to Factory Mutual specifications upon request.

Model YBF Lonergan Flanged Y Bases

A cast iron base for twin pop safety valves. Good for working pressures up to 300 pounds. Recommended for either stationary or marine use.

Can also be furnished in either bronze, semi-steel or cast steel; prices upon application.

Size Valve Inlet Inches	Faced Only Each	Faced and Drilled Each	Diameter Inlet Inches	Diameter Top Flanges Inches	Diameter Base Flange Inches	Weight Undrilled Pounds
2	$20.00	$23.00	3	6½	8¼	34½
2½	24.00	27.00	4	7½	10	47½
3	32.00	35.00	4½	8¼	10½	66½
3½	38.00	42.00	5	9	11	81½
4	45.00	50.00	6	10	12½	105½
4½	68.00	75.00	6⅜	10½	14	162½
5	83.00	95.00	8	12	13¾	237

We are as near as your nearest telephone.

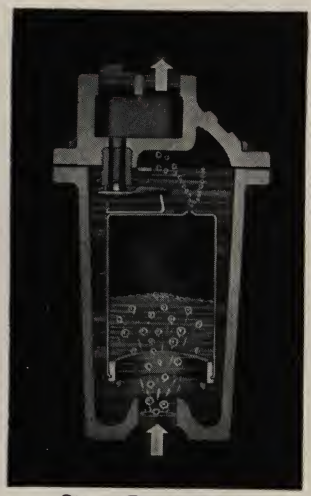
Armstrong Inverted Bucket Steam Traps

Cast Semi-Steel—For Low and Medium Pressures

Bottom Inlet Series

No. 211 No. 212 No. 213 No. 214 No. 215 No. 216

No.	211	212		213		214	215		216	
Pipe Connections ... inches	½	½	¾	½	¾	1	1	1¼	1½	2
Regular Trap ... each	$9.25	$15.00	.....	$20.75	.....	$29.00	$38.00	.....	$55.00	.....
Blast Trap ... each	10.75	17.00	.....	22.75	.....	31.50	40.50	.....	60.00	.....
Regular Trap, with Check Valve ... each	13.25	19.00	.....	24.75	$26.75	37.00	46.00	$48.00	67.00	$70.00
Maximum Pressure ... pounds	250	250	250	250	250	250	250	250	250	250
Weight ... pounds	5½	10½	10½	19	19	32	47	47	80	80

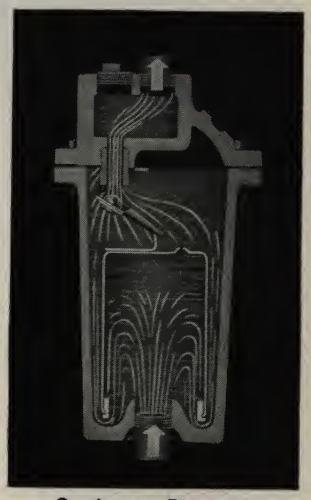


Steam Floats Bucket Closing Off Trap

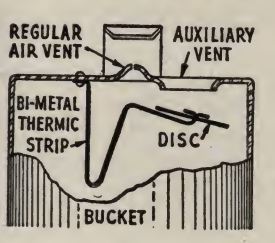
Continuous Discharge Capacity in Pounds of Water per Hour at 250 Pounds Maximum Pressure

Pressure Pounds	No. 211	*No. 212	No. 213	No. 214	No. 215	No. 216
5	830	1600	2900	4800	7600	14500
10	950	1900	3500	5800	9000	17300
15	1060	2100	3900	6500	10000	19200
20	880	1800	3500	6000	8500	18500
25	950	1900	3800	6500	9200	20000
30	1000	2050	4000	6800	9800	18000
40	770	1700	3800	5800	8300	20000
50	840	1900	4100	6300	9000	18200
60	900	2000	4400	6800	9500	19800
70	950	2200	3800	6000	9200	18300
80	800	1650	4000	6400	9700	19000
90	830	1730	3400	5900	10000	17500
100	860	1800	3600	6200	10400	18000
125	950	2000	3900	6700	10900	20000
150	810	1500	3500	5700	9500	18500
200	860	1600	3200	5300	9200	17500
250	760	1300	3500	5700	7000	19000

*In 200 to 250-pound range, furnished with ½-inch pipe connection.



Condensate Displaces Steam, Opening Trap

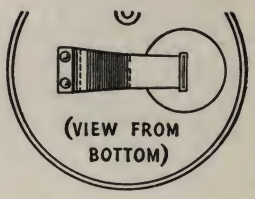


For Blast Trap Service

All Armstrong Traps are readily convertible into blast type traps merely by using buckets equipped with the patented auxiliary thermic air vent.

As shown in the sketches, the mechanism for this vent consists of a stainless steel disc slotted to receive the end of a bi-metal strip. Different coefficients of expansion in the bi-metal cause it to bend down when cold and up when hot. Normally, it is set to close at 212°, but it can be set to close at higher temperatures.

Capacity: 50 to 100 times as much air handling capacity as regular traps.



Buyers Guide

A Check List for Traps:

1. Ability to draw off air
2. Ability to handle hot condensate
3. Ability to handle all ordinary sediment and sludge
4. Freedom from wire-drawing in orifice
5. No steam loss for any load condition
6. Ability to hold tight against vacuum
7. Freedom from wear
8. Small size—light weight
9. Simple construction
10. Large capacity

The Armstrong Steam Trap

An Armstrong Trap will not air bind. A thermic bypass can be furnished where large volumes of air must be removed promptly.

Will handle condensate regardless of temperature. No cooling leg required.

The Armstrong Trap is self-scrubbing. Sludge and sediment are discharged with the condensate.

Heat treated chrome steel valve parts are highly resistant to wire-drawing.

Discharge orifice always water-sealed against steam loss.

Long life valve parts and water seal prevent steam from getting into vacuum return line.

Working parts made of highest quality material available.

Small size and light weight made possible by efficient leverage system.

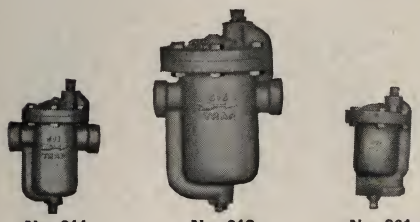
Standard trap has only two moving parts—lever assembly and inverted bucket.

For evidence, see Capacity Chart which shows hot condensate figures. Cold water capacity figures would be almost twice as great.

Armstrong Inverted Bucket Steam Traps

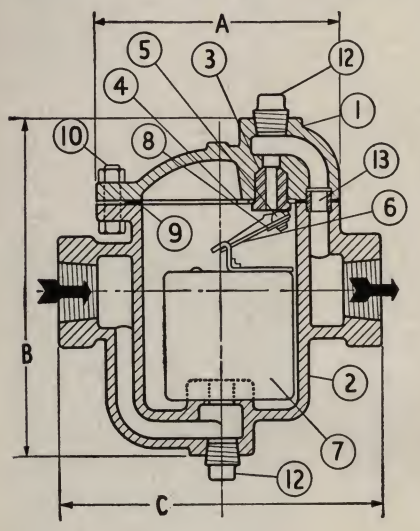
Cast Semi-Steel—For Low and Medium Pressures

Side Inlet Series



No. 811 No. 813 No. 801

No	800	811	812	813	801
Pipe Connections ..... inches	½, ¾	½, ¾	½, ¾	¾, 1	½, ¾
Regular Trap ..... each	$7.00	$10.00	$16.00	$22.00	$7.00
Blast Trap ..... each	8.50	11.50	18.00	24.00	8.50
Regular Trap, with Check Valve . ea.	11.00	*14.00	*20.00	†28.00	11.00
Maximum Pressure ..... pounds	250	250	250	250	250
Weight ..... pounds	4½	5½	13½	25	4½



Continuous Discharge Capacity in Pounds of Water per Hour at 250 Pounds Maximum Pressure

Pressure Pounds	No. 800	No. 811	No. 812	No. 813	No. 801	Pressure Pounds	No. 800	No. 811	No. 812	No. 813	No. 801
5	450	830	1600	2900	450	70	660	950	2200	3800	660
10	560	950	1900	3500	560	80	690	800	1650	4000	690
15	640	1060	2100	2900	640	90	620	830	1730	3400	620
20	690	880	1800	3500	690	100	640	860	1800	3600	640
25	460	950	1900	3800	460	125	680	950	2000	3900	680
30	500	1000	2050	4000	500	150	‡	810	1500	3500	‡
40	550	770	1700	3800	550	200	‡	720	1200	3200	‡
50	580	840	1900	4100	580	250	‡	760	1300	3500	‡
60	635	900	2000	4400	635	...	...	...	....	....	...

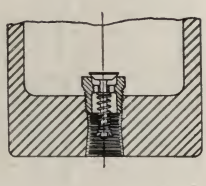
*For ½-inch—†for ¾-inch pipe connections; other sizes, prices upon request.

‡Not regularly furnished for pressure above 125 pounds to avoid small orifices that might plug up with dirt.

Check Valves

All stainless steel internal type check valves can be used with all standard Armstrong forged steel and cast semi-steel traps.

Size In.	Each	Size In.	Each
½	$4.00	1¼	$10.00
¾	6.00	1½	12.00
1	8.00	2	15.00



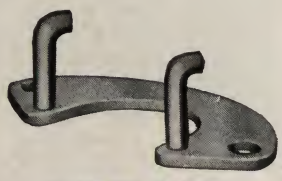
Parts for Armstrong Free Floating Lever Steam Traps

Bucket

Valve Retainer

Valve

Guide Pin



Guide Pin Assembly

Plate Screw

Cap

Valve Seat

Valve Lever

Each

Name of Part	No. 800 Aloe No. 801 Arrow	No. 211 Aspen	No. 811 Brown	No. 212 Birch	No. 812 Cherry	No. 213 Walnut	No. 813 Dawn	No. 214 Hemlock	No. 215 Larch	No. 216 Tamarack	No. 312 Antimony	No. 313 Barium	No. 315 Bismuth	No. 316 Boron
Body (Includes Thimble)	$1.75	$2.00	$3.00	$4.75	$5.50	$6.00	$7.00	$10.00	$13.00	$16.50	$14.00	$25.00	$36.00	106.00
Cap	1.75	2.00	1.75	2.50	2.75	3.50	3.75	5.00	6.25	8.50	9.00	18.00	26.50	57.00
Gasket	.10	.08	.10	.08	.10	.10	.15	.15	.15	.25	.10	.10	.15	.25
Bolt and Nut Set	.15	.20	.15	.20	.25	.25	.65	.75	.90	1.30	1.50	2.80	4.20	7.85
Bucket	1.50	2.25	2.25	3.75	3.75	4.50	4.50	6.00	8.00	12.00	4.25	4.50	8.00	12.00
Bucket with Thermic	3.00	3.75	3.75	5.75	5.75	6.50	6.50	8.50	10.50	17.00	6.25	6.50	10.50	17.00
Guide Pin Assembly and Screws	.50	.50	.50	1.25	1.25	1.50	1.50	1.75	2.00	3.50	1.50	1.50	2.00	3.50
Guide Pin Assembly Less Screws	.40	.40	.40	1.15	1.15	1.30	1.30	1.55	1.80	3.25	1.30	1.30	1.80	3.25
Screws for Guide Pin Plate	.10	.10	.10	.10	.10	.20	.20	.20	.20	.25	.20	.20	.20	.25
Valve Lever	.40	.40	.40	.80	.80	1.00	1.00	1.35	1.65	2.60	1.00	1.00	1.65	2.60
Valve Retainer	.15	.15	.15	.20	.20	.25	.25	.40	.60	.80	.25	.25	.60	.80
Valve	.70	.70	.70	1.50	1.50	1.75	1.75	2.25	2.75	4.60	1.75	1.75	2.75	4.60
Valve Seat	1.00	1.00	1.00	1.50	1.50	2.00	2.00	2.75	3.50	5.50	2.00	2.00	3.50	5.50
Int. Mechanism Complete	4.25	5.00	5.00	9.00	9.00	11.00	11.00	14.50	18.50	29.00	10.75	11.00	18.50	29.00
Pressure Change Assembly Complete	2.75	2.75	2.75	5.25	5.25	6.50	6.50	8.50	10.50	17.00	6.50	6.50	10.50	17.00
Cap and Interior Mechanism to Convert old Style Bodies (With Gasket)	....	....	....	....	....	14.60	.....	19.65	24.90	37.75	....	29.10	45.15	86.25

Armstrong Forged Steel Steam Traps

For Pressures Up to 2400 Pounds

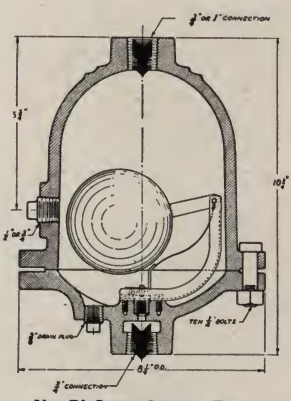
CAP AND BODY: Die forgings (S.A.E. 1030) 79,000-pound tensile strength. BOLTS: Super Temp., 149,000-pound tensile. NUTS: Hex. semi-finish (S.A.E. 1030). VALVE: Chrome steel (heat treated). VALVE RETAINER: Stainless steel. VALVE LEVER: Stainless steel. VALVE GUIDE PLATE: Stainless steel. GUIDE PLATE SCREW: Stainless steel. VALVE SEAT: Chrome steel (heat treated). GASKET: Compressed asbestos graphite or soft iron BUCKET ASSEMBLY: Stainless Steel. INLET TUBE: Wrought iron. BUCKET WEIGHT: Cast iron.

Continuous Discharge Capacity—Pounds of Water per Hour

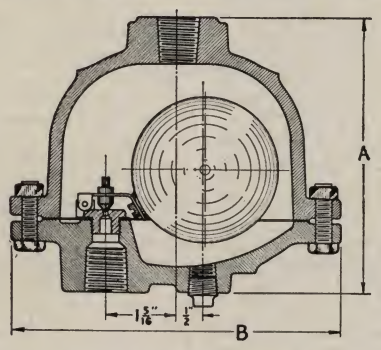
No. Screwed	No. Flanged	Pressure, Pounds 300	400	500	600	700	800	900	1400	2400
312	312F	2,000	2,200	.....	.....	.....	.....	.....	....	....
313	313F	2,800	3,200	2,250	2,450	.....	.....	.....	....	....
315	315F	7,500	6,900	7,400	5,600	.....	.....	.....	....	....
316	316F	16,000	13,800	14,800	14,000	.....	.....	.....	....	....
413	413F	.....	.....	.....	2,450	2,550	2,650	2,750	....	....
415	415F	.....	.....	.....	5,600	5,800	6,000	4,400	....	....
416	416F	.....	.....	.....	14,000	14,400	11,700	12,000	....	....
...	515	.....	.....	.....	.....	.....	.....	.....	5400	....
...	615	.....	.....	.....	.....	.....	.....	.....	....	3000

Screwed No.	Each	Pipe Conn. Inches	Height Inches	Wt. Lb.	Flanged No.	Each	Pipe Conn. Inches	Height Inches	Wt. Lb.	Diam. Inches	Body Bolts No.	Body Bolts Diam. In.	Max. Steam Press. Pounds
312	$35.00	½ or ¾	10 3/16	29	312F	$65.00	½ or ¾	10 1/16	30	6¾	6	½	450
313	56.00	½ or ¾	11⅜	47	313F	85.00	½, ¾, 1	11 13/16	49	8	8	⅝	600
315	80.00	1 or 1¼	15	92	315F	120 00	1, 1¼, 1½	15½	95	9¾	9	¾	600
316	200.00	1½ or 2	16¾	160	316F	240.00	1½ or 2	17⅜	163	11⅞	10	⅞	600
413	75.00	½ or ¾	11 11/16	65	413F	95.00	½, ¾, 1	12 5/16	73	8⅝	8	¾	900
415	100.00	1 or 1¼	15	112	415F	150.00	1, 1¼, 1½	15⅞	136	10¾	9	1	900
416	225.00	1½ or 2	17⅝	173	416F	265.00	1½ or 2	18 3/16	173	12½	12	1	900
...	.....	.....	....	...	515	300.00	1 or 1¼	15⅞	208	12¼	10	1¼	1500
...	.....	.....	....	...	615	400.00	1, 1¼, 1½	15⅞	208	12¼	10	1¼	2400

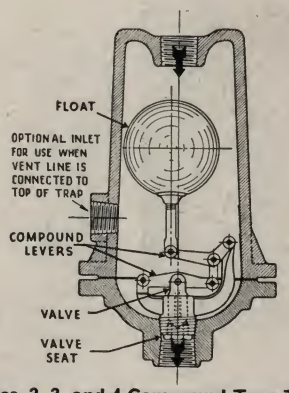
Armstrong Ball Float Air Traps



No. 71 Snap Action Trap



No. 21 Single Pivot Trap



Nos. 2, 3, and 4 Compound Type Traps

For draining water from compressed air lines or any liquid from any gas under pressure.

No. 71 trap requires no priming. The valve opens wide with a decided snap and closes in the same manner, which makes it impossible for ordinary pieces of dirt to hold the valve away from the seat.

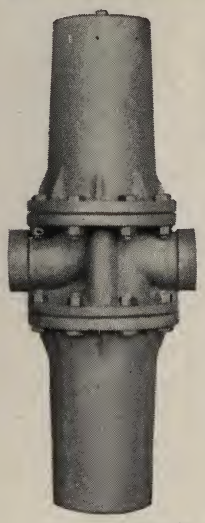
No. 21 is a compact, direct-connected ball float trap that is widely used where dirt and oil conditions are not severe. Priming is unnecessary.

Nos. 2, 3, and 4 also have direct-acting floats but are connected through a compound type lever. Self priming.

All three types of traps are made of cast iron.

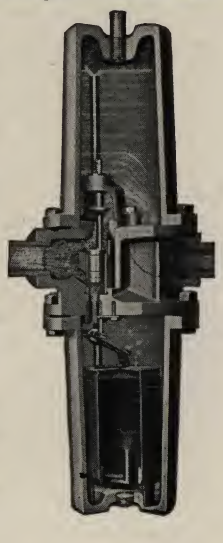
No	71	21	2	3	4
With Regular Mechanism. each	.....	$11.00	$24.75	$42.00	$60.00
With All Stainless Parts . . each	$30.00	12.50	37.50	61.25	84.60
Leverage Mechanism	Snap Action	Single Pivot	Compound	Compound	Compound
Pipe Connections . . . . . inches	¾, 1	½ or ¾	½ or ¾	1 or 1¼	1½ or 2
Height, (A) . . . . . inches	10¾	5¼	10	14	16¾
Diameter, (B) . . . . . inches	8¼	6¼	6¼	8½	10
Maximum Pressure . . . . . pounds	250	125	250	250	250
Capacity in Pounds of Water per Hour at					
15 Pounds Pressure	1400	750	700	2700	8000
100 Pounds Pressure	1300	800	650	1500	4500
125 Pounds Pressure	1400	.....	.....	.....	.....
250 Pounds Pressure	1000	.....	.....	.....	.....
Weight . . . . . pounds	31	8	18	45	74

Armstrong Piston Operated Compound Steam Traps



Designed for draining steam purifiers, separators, flash tanks, continuous blow-down systems, de-super-heaters, hot water heaters, or any other steam-using equipment producing very large volumes of condensate at low, medium or high pressures.

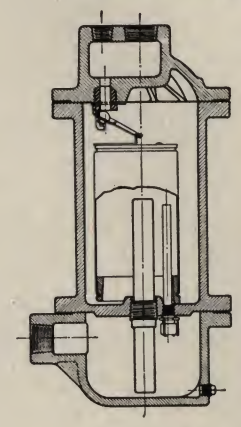
Nos. 233, 235, 237, and 239 are made of cast iron; Nos. 333, 335, and 337, of forged steel.



No.	Each	Extra for All Stainless Trim Each	Extra for Flanges Screwed	Extra for Flanges Integral	Pipe Conn. In.	Ht. In.	Diam. In.	Max. Pres. Lb.	Wt. Lb.
233	$150.00	$25.00	$6.00	$30.00	1	19	8½	250	41
235	200.00	37.25	6.50	40.00	2	26⅝	10½	250	101
237	250.00	46.00	7.00	50.00	3	32	14	250	165
239	400.00	**	*	**	6	41	13½	50	313
333	270.00	13.00	25.00	40.00	1	21⅛	8	600	116
335	350.00	22.00	30.00	50.00	2	28¾	9¾	600	232
337	525.00	25.00	40.00	60.00	3	33⅝	11⅞	600	391

*Not made.
**Standard.

Armstrong Special Steam Traps



For Pulsating Pressures

Pulsating pressures caused by reciprocating engines and pumps may produce vibration in the mechanism of a trap.

To prevent this, the Armstrong line includes special traps similar to standard traps except for the addition of a separating chamber in which the water accumulates while maintaining the bucket full of steam.

In this way, the pulsations do not affect the buoyancy of the bucket and vibration of the mechanism is eliminated.

Forged steel body; chrome and stainless steel wearing parts.

No.	Each	Pipe Conn. Inches	Height Inches	Diam. Inches	Max. Press. Lb.
223	$27.75	½ or ¾	13½	6⅜	250
225	45.00	1 or 1¼	18¼	8½	250
226	75.00	1½ or 2	22¼	10	250
323	80.00	½ or ¾	13 15/16	8	600
325	130.00	1 or 1¼	18⅞	10	600
326	230.00	1½ or 2	21⅝	12⅛	600

Continuous Discharge Capacity—Lb. of Water per Hour

No.	Pressure, Pounds 15	100	300	600	Wt. Lb.
223	3,900	3,600	.....	.....	33
225	10,000	10,400	.....	.....	73
226	19,200	18,000	.....	.....	124
323	.....	.....	2,800	2,450	62
325	.....	.....	7,500	5,600	116
326	.....	.....	16,000	14,000	208

Armstrong Unit Humidifiers

For all jobs where humidity is required during heating season only.

Types CK-2 and CK-3 used in much the same fashion as unit heaters. Electric fans insure circulation of humidified air throughout surrounding space.

Type CK-4, a heavy duty humidifier for installation in central heating system air ducts.

Types AK-12 and AK-14 are compressed air operated. Standard unit includes pneumatic hygrostat pilot valve, and Type CK-2 humidifier fitted with steam valve, air outlet nozzle, steam strainer, and drainage trap.

No	*CK-2	†CK-3	CK-4	*AK-12	AK-14
110 V., 60 Cy., A.C. each	$100.00	$200.00	$325.00	$175.00	$375.00
Less Strainer, Deduct	2.75	3.25	4.00	2.75	4.00
Less Trap, Deduct	7.00	7.00	7.00	7.00	7.00
Less Humidistat, Deduct	20.00	20.00	20.00	42.00	42.00
Less Fan & Motor, Deduct	10.00	20.00	.....	.....	.....
Steam Inlet...inches	¾	1,1¼	1¼	¾	1¼
Drain Conn...inches	½	½	½	½	½
Ship. Weight.....lb.	37	65	267	37	267

*Specify if 7/32 or ¼-inch orifice is desired.
†With ⅜, 13/32 or 7/16-inch orifice.
Can be furnished with other current characteristics.

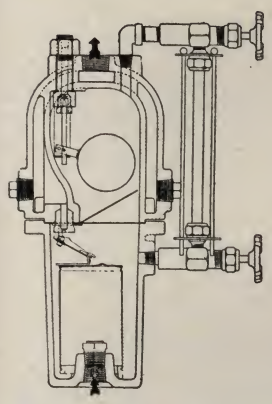
Pounds of Steam Required to Humidify 1000 Cubic Feet of Space at 70°F. Room Temperature

Outside Temp. Degrees	Relative Humidity Desired, Pounds 25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%
35	.137	.252	.376	.483	.598	.713	.830	.943	1.057	1.175	1.288	1.409
30	.188	.304	.418	.535	.648	.763	.880	.995	1.108	1.225	1.341	1.452
25	.243	.357	.472	.588	.703	.817	.934	1.048	1.162	1.281	1.395	1.508
20	.292	.406	.520	.638	.752	.867	.982	1.096	1.212	1.328	1.442	1.557
15	.335	.449	.563	.680	.794	.910	1.025	1.141	1.255	1.372	1.486	1.600
10	.372	.486	.600	.717	.830	.945	1.061	1.177	1.282	1.408	1.524	1.635
5	.408	.523	.637	.754	.868	.983	1.101	1.215	1.328	1.442	1.557	1.671
0	.440	.555	.668	.787	.900	1.015	1.131	1.245	1.360	1.478	1.592	1.705
−5	.475	.588	.702	.820	.934	1.049	1.167	1.282	1.395	1.512	1.623	1.738
−10	.503	.615	.729	.847	.961	1.076	1.194	1.359	1.422	1.539	1.650	1.765
−15	.529	.642	.756	.874	.988	1.103	1.221	1.386	1.449	1.566	1.677	1.792
−20	.551	.664	.778	.896	1.010	1.125	1.243	1.408	1.471	1.588	.1.699	1.814
−25	.572	.685	.799	.917	1.031	1.146	1.264	1.429	1.492	1.609	1.720	1.835

Humidifier Capacity in Pounds of Steam per Hour with Various Steam Pressures

No.	Orifice Inches	Steam Pressure, Pounds 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
AK12 or CK2	7/32	8	10	12	14	16	18	20	23	26	29	32	35	38	41	44
AK12 or CK2	¼	13	18	23	28	33	38	43	...	...	...	....	....	....	....	....
CK3	⅜	18	24	30	37	44	52	59	67	75	84	92	101	110	120	130
CK3	13/32	25	32	39	48	57	67	78	90	106	125	....	....	....	....	....
CK3	7/16	38	59	80	102	125	...	...	...	...	...	....	....	....	....	....
AK14 or CK4	...	150	240	330	420	510	600	690	780	870	960	1050	1140	1230	1320	1410

Armstrong Refrigerant Gas Purgers



For automatic air purging service on compression systems and for combination purging and expansion valve service.

Is completely automatic in operation, requiring no attention or adjustment after being placed in service.

Reduces waste refrigerant gas to a minimum. Removes air and incondensable gases continuously down to the vanishing point.

Separation takes place at high side pressures and low side temperatures, which makes for maximum economy.

The Armstrong Purger is offered on a basis of complete satisfaction guaranteed.

No. 243

Cast semi-steel body, gauge glass, and all steel trim.

Height, 18 inches. Diameter at flange, 7¼ inches. Bottom gas inlet, ½ inch; top suction outlet, 1 inch; side liquid inlet, ¼ inch; and top air outlet, ⅛ inch.

Capacity: Has been used successfully on refrigerating systems ranging in capacity from 12 up to 1200 tons.

Net weight, 47 pounds. Shipping weight, 55 pounds.

No. **243**. . . . . each **$120.00**

No. 343

With forged steel body.

Height, 27 inches. Diameter at flange, 9¾ inches.

Capacity is similar to No. 243.

Approximate weight, 220 pounds.

No. **343**. . . . . each **$250.00**

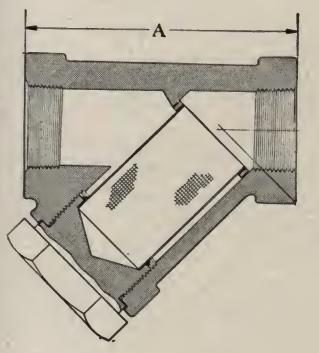
For complete bulletin showing details of operation and prices, phone or write.

Vogt Drop Forged Steel Strainers

Screw Bonnet—Gasket Joint

Screwed Ends

Carbon Steel: 1200 Pounds Pressure at 900°F.
3000 Pounds Cold Non-Shock Pressure



A flat gasket is between the male and female bonnet joint.

Parts subject to wear are easily replaced.

Regularly fitted with 40-mesh, 31-gage, 11½-13 per cent chrome stainless steel screen.

Socket weld ends can be furnished; prices on request.

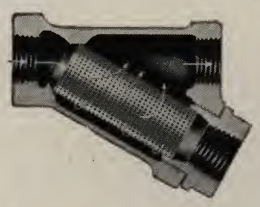
Horizontal Y Type

Size In.	Horizontal Y Type No.	Horizontal Y Type Each	Horizontal Y Type End to End In.	Angle Type No.	Angle Type Each	Angle Type Ctr. to End In.
⅜	2271	$12.50	2½	2281	$10.00	1 5/16
½	2272	12.50	3	2282	10.00	1½
¾	2273	12.50	3½	2283	10.00	1¾
1	2274	16.50	4	2284	13.00	2
1¼	2275	16.50	4½	2285	13.00	2⅜
1½	2276	22.50	6	2286	20.00	2½
2	2277	25.00	7	2287	20.00	3¼

Sarco Pipe Line Strainers

Type SB—Screwed

Furnished in cast iron for saturated steam pressures up to 125 pounds, cold liquid pressures to 200 pounds, in semi-steel for saturated steam to 250 pounds, cold liquid to 400 pounds; and in bronze for saturated steam to 225 pounds, cold liquid to 350 pounds per square inch.



Sizes, ¼ to 1½ inches have screwed ends and screwed strainer cap; sizes, 2 to 3 inches have screwed connections with flanged strainer cap.

Pipe Size In.	Cast Iron Each	Cast Iron Ship. Wt. Lb.	Semi-Steel Each	Semi-Steel Ship. Wt. Lb.	Bronze Each	Bronze Ship. Wt. Lb.	End to End In.	Ht. Over-all In.	Blow-off Conn. In.
¼	$1.30	1¾	$2.15	1¾	$2.25	1¾	2⅞	2⅜	¼
⅜	1.30	2	2.30	2	2.40	2⅛	3¼	2⅝	⅜
½	1.70	2½	2.65	2¾	3.00	2⅞	3 9/16	3⅛	½
¾	1.90	3	3.30	3⅛	4.05	3¼	4 3/16	3⅝	½
1	2.80	4½	4.50	5	6.30	5¼	5½	4¾	¾
1¼	4.30	8	5.80	8½	9.00	9½	6¼	5¼	1
1½	4.70	9	6.60	9½	11.25	10¾	6⅝	5¾	1
2	8.55	16	10.25	17¼	19.50	19¼	8 3/16	7½	1¼
2½	11.00	22	16.50	23½	34.00	27	9⅜	8½	1¼
3	16.35	35	22.55	37¼	51.00	42	10¼	10¼	1¼

Type SBH—Extra Heavy—Screwed

Furnished in high grade semi-steel, for saturated steam pressures to 350 pounds and cold liquid to 600 pounds; in cast steel for saturated or superheated steam to 500 pounds and 600°F. total temperature, and for cold liquids to 800 pounds pressure; in bronze for saturated steam to 350 pounds, and cold liquids to 600 pounds pressure.

Sizes, ¼ to 1½ inches have screwed ends and screwed strainer cap; sizes, 2 to 3 inches have screwed connection with flanged strainer cap.

Pipe Size In.	Semi-Steel Each	Semi-Steel Ship. Wt. Lb.	Cast Steel Each	Cast Steel Ship. Wt. Lb.	Bronze Each	Bronze Ship. Wt. Lb.	End to End In.	Ht. Over-all In.	Blow-Off Conn. In.
¼	$2.55	2	$18.00	2⅛	$3.60	2¼	3	2⅜	¼
⅜	2.85	2½	18.00	2⅝	4.50	2¾	3¾	2¾	⅜
½	3.00	3	19.50	3¼	6.00	3½	4	3¼	½
¾	4.35	4	28.50	4¼	9.00	4½	4⅞	3¾	½
1	6.15	7	33.00	7¼	14.00	8½	6⅜	5	¾
1¼	7.05	10	49.50	10¾	16.50	11½	7⅜	5¾	1
1½	8.25	11½	54.00	12½	18.00	13½	7¾	5¾	1
2	15.00	22	79.50	23½	37.50	26	9	7⅛	1¼
2½	21.00	29½	108.00	31½	58.50	35	10	9	1¼
3	31.50	45	135.00	48	90.00	52½	11	10⅜	1¼

Type D—Flanged

Furnished in cast iron for saturated steam pressures up to 125 pounds and cold liquid pressures to 200 pounds; also in extra heavy cast iron for saturated steam to 250 pounds and cold liquid to 400 pounds. Prices include standard drilling of flanges.

Pipe Size In.	125-Pound Each	125-Pound Face to Face In.	125-Pound Ht. Over-all In.	125-Pound Ship. Wt. Lb.	250-Pound Each	250-Pound Face to Face In.	250-Pound Ht. Over-all In.	250-Pound Ship. Wt. Lb.	Blow-Off Conn. In.
2	$32.00	8½	10¼	31	$36.00	9⅛	10⅜	34	1¼
2½	36.00	10⅝	11¾	39	43.00	11 5/16	12	54	1¼
3	39.00	11¼	12⅞	59	48.00	11¼	13¼	62	1¼
4	66.00	16¼	17½	120	74.00	17	18	114	1¼
5	89.00	18	20	168	112.00	19	21	178	1½
6	120.00	20½	22	195	144.00	21½	23¼	212	1½

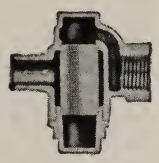
Brass Screens

Standard screens are made of perforated metal, 1/64-inch holes (625 per sq. in.) for steam or gas; 1/32-inch holes (324 per sq. in.) for water; 3/64-inch holes (225 per sq. in.) for light oil; and 1/16-inch holes (100 per sq. in.) for heavy oil.

Pipe Size, In.	Each	Pipe Size, In.	Each	Pipe Size, In.	Each	Pipe Size, In.	Each
¼	$.50	1	$.95	2½	$1.90	6	$9.40
⅜	.50	1¼	1.10	3	2.30	. . .	. . . .
½	.60	1½	1.25	4	7.00	. . .	. . . .
¾	.80	2	1.50	5	8.50	. . .	. . . .

Also furnished in monel, mild steel, stainless steel, and 100-mesh brass gauze screens, at additional charges.

No. 37 Watts Strainers



An all-bronze strainer for water and air. Has heavy perforated brass screen.

The ½-inch size has I.P.S. female and male outlet. All other sizes have I.P.S. female inlet and outlet.

Size.....in.	⅛	¼	⅜	½
Each.....	$2.00	2.00	2.00	2.00
Weight.....lb.	⅞	⅞	⅞	⅞

No. 34 Watts Strainers

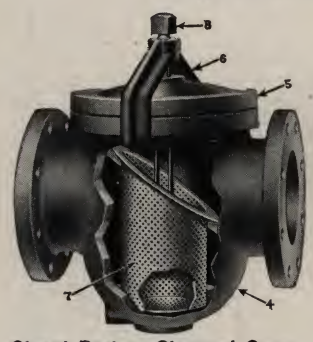
An all-bronze strainer for water or air. All sizes have I.P.S. female inlet and outlet.

Size In.	Each	Wt. Lb.	Size In.	Each	Wt. Lb.
½	$4.00	1½	1½	$14.00	4½
¾	5.00	2	2	22.00	8
1	8.00	2¾	2½	28.00	11
1¼	12.00	4	...	.....	....

No. 528 McAlear Cast Iron Suction Strainers

Flanged—Open or Closed Basket
Clamped or Bolted Cover

Working Pressures: Strainers, with Bolted Covers, Up to 250 Pounds
With Clamped Covers, Sizes 2 to 4 Inches, Up to 50 Pounds
Larger Sizes, Up to 30 Pounds



Closed Basket, Clamped Cover

Open Basket, Bolted Cover

Size Inches	Standard with Clamped or Bolted Covers: With Brass Baskets Each	Standard with Clamped or Bolted Covers: With Special Metal Baskets Each	Extra Heavy, with Bolted Covers: With Brass Baskets Each	Extra Heavy, with Bolted Covers: With Special Metal Baskets Each
2	$50.00	$52.00	$55.00	$57.00
2½	55.00	59.00	60.00	64.00
3	60.00	67.00	65.00	72.00
4	75.00	87.00	80.00	92.00
5	100.00	110.00	105.00	115.00
6	130.00	144.00	140.00	154.00
8	210.00	226.00	240.00	256.00
10	325.00	345.00	360.00	380.00
12	520.00	546.00	560.00	586.00

No. 1 Expansion Tank Water Gauges

Tested for Pressure to 150 Pounds

Used in connection with hot water systems.

Standard finish is rough brass body with finished trimmings.

Threaded for ½-inch iron pipe.

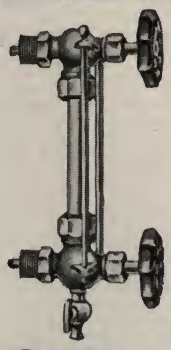
Gauge glass is ⅝x12 inches, protected by two guards.

Has T handle drip cock.

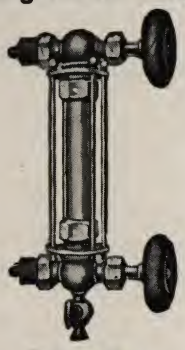
American thread.

No. 1.....each $2.60

Consolidated Self-Cleaning Water Gauges



Rough Body, Iron Wheels



Polished Body, Wood Wheels

With 2 rods. Can be supplied with steel, wood, or composition wheels.

Heavy Pattern
Tested for Pressure to 150 Pounds

	Rough Body Iron Wheels			Pol. Body Wood Wheels
No.....	2	*5	10	7
Each.....	$2.75	3.00	4.50	4.25
Shank Conn.....in.	⅜	½	¾	1½
Size Glass.....in.	⅝x8 or 10	⅝x12	¾x16	⅝x12
Weight.....lbs.	1⅞	1 15/16	2½	2

*Also made with shanks up to 2½ inches long under hex. Prices upon application.

Low Pressure—House Heating Type
Tested for Pressure to 75 Pounds

	Rough Body, Iron Wheels		Pol. Body, Wood Wheels
No.....	†2-A	†5-A	7-A
Each.....	$2.50	2.75	3.75
Shank Connections.....inches	⅜	½	½
Size of Glass.....inches	⅝x10	⅝x12	⅝x12
Weight.....pounds	1⅜	1½	1¾

†Also with shanks up to 1¾ inches long under hex.
Gauge glass and guard rods not furnished unless specified.

No. 1183 Lunkenheimer Automatic Liquid Gauges

With Iron Body, Stainless Steel Stem, Gland, Retaining Ring, Stuffing Box Washers and Ball Check Valves

350 Lb. W.O.G.

For use on pressure tanks, gravity tanks and other reservoirs handling liquids which attack brass or bronze. Should not be used as a water gauge on steam boilers.

Hand operated valves in upper and lower bodies are supplemented by ball check valves which automatically close in the event of glass breakage, permitting safe approach for valve closure by hand.

Cone-shaped rubber packings prevent leakage around glass. Tightness is obtained by internal pressure rather than by screwing down on stuffing box nut; glass breakage when repacking is eliminated. When renewing rubber packings, inside of cones should be moistened.

Has 4 rods, female pipe threaded ends and ⅜-inch standard pipe plug in lower body for drain connection.

Regularly furnished with Fig. 1678, cone Packings, for oils and gasoline. Fig. 1677, Black Rubber Packings, for liquid not solvent to rubber are available. Unless otherwise specified, gauge with glass and rods for 18-inch centers will be furnished.

Size Pipe Connections.....inches ¾
Size Glass.....inches ¾
No. 1183.....each $25.00

Vogt Drop Forged Steel Automatic 2-Gauge Cocks

Union Bonnet—Ground Joint—Inside Screw Stem

Carbon Steel: 600 Pounds Non-Shock Pressure at Temperatures Not to Exceed 750°F.—*Adjust Rating to Gauge Glass Used

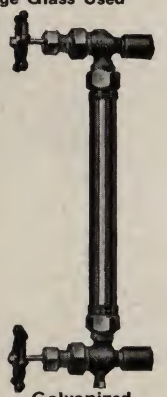
4-Rod Guard

In ordering cocks, specify the intended service and the proper stem and glass packings will be furnished.

Bottom cock is regularly furnished with ⅜-inch drain plug. Balls automatically shut off liquid in event of broken glass.

Female connections are regularly furnished; male connections furnished when specified.

Regularly furnished suitable for ¾-inch glass.



Galvanized Metal Guard

Approximate weight per pair, 11 pounds.

*Gauge glasses are not furnished, unless ordered.

11½-13% Chrome Stainless Steel Trimmings Renewable Seats

No.	1698	1699
Per Pair	$32.50	32.50
Size....in.	½	¾

Steel Trimmings Renewable Seats

No.	1702	1703
Per Pair	$30.50	30.50
Size....in.	½	¾

Monel Trimmings Renewable Seats

No.	1700	1701
Per Pair	$32.50	32.50
Size....in.	½	¾

Integral Seats

No.	1704	1705
Per Pair	$29.00	29.00
Size....in.	½	¾

Guards

For centers not more than 3 feet.

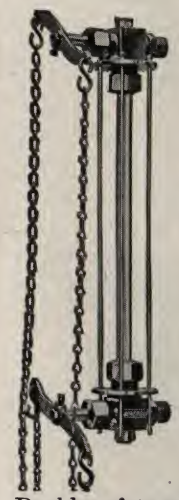
No. **1720**, 4-Rod Guard.....each **$6.00**

No. **1155**, Galvanized Metal Guard.....each **4.00**

For Centers More than 3 Feet, Add per Inch..... **.10**

Lonergan Water Gauges

Model QC



Bronze

For pressures of 350 pounds and above.

No drip cock furnished. Lower fitting tapped ¼-inch I.P. female. Can be closed from a safe distance by simply pulling chain. Prevents scalding of fireman in case glass breaks. Complete with rods, glass and 12 feet of chain.

Size No.	Semi-Fin. Per Set	Finished Per Set	Nickel-Plated Per Set	Pressure Lbs.	Thread In.	Body
*3	$8.00	$9.00	$11.00	200	½	Sq.
*4	8.00	9.00	11.00	200	¾	Sq.
**5	11.00	12.00	14.00	350	½	Sq.
**6	11.00	12.00	14.00	350	¾	Sq.
†7	21.00	22.00	24.00	500	¾	Rd.
†8	21.00	22.00	24.00	500	1	Rd.
‡9	33.00	34.00	36.00	500	4⅝x¾	Rd.

Size of glass and No. of rods furnished are the same as in Model USN, described below.

Model USN

For pressures of 350 pounds and above.

Designed especially for marine work. Double safety guard against scalding of fireman. Operated by automatic ball valve outside of connection, or by pulling chain from a safe distance. Complies with A.S.M.E. Code.

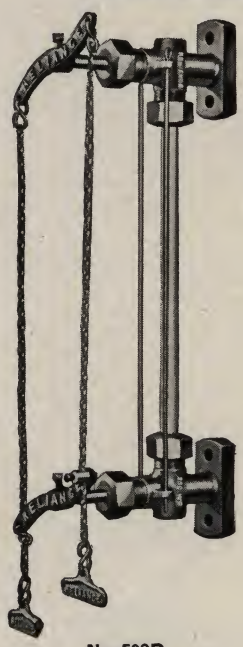
Complete with rods, glass and 12 feet of chain.

Size No.	Semi-Finished Per Set	Finished Per Set	Nickel-Plated Per Set	Pressure Pounds	Thread Inches	Glass Inches	No. of Rods	Body
*23	$10.00	$11.00	$13.00	200	½	⅝x12	2	Sq.
*24	10.00	11.00	13.00	200	¾	¾x16	2	Sq.
**25	13.00	14.00	16.00	350	½	¾x16	4	Sq.
**26	13.00	14.00	16.00	350	¾	¾x16	4	Sq.
†27	24.00	26.00	29.00	500	¾	¾x16	4	Rd.
†28	24.00	26.00	29.00	500	1	¾x16	4	Rd.
‡29	38.00	40.00	43.00	500	4⅝x¾	¾x16	4	Rd.

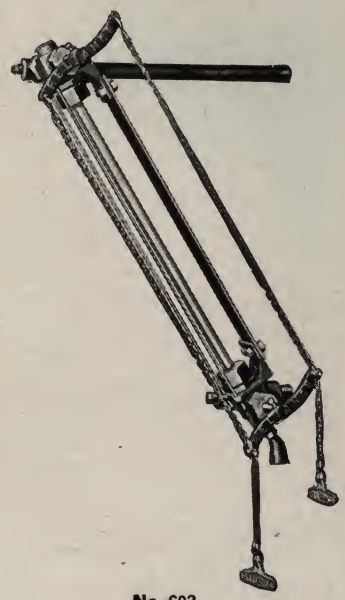
Pattern: *Medium. **Extra Heavy. †Double extra heavy. ‡Double extra heavy flanged.

Reliance Standard Water Gauges

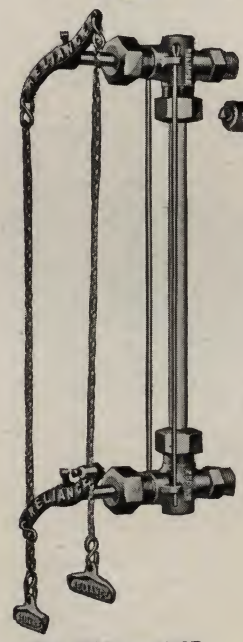
For Pressures to 250 Pounds



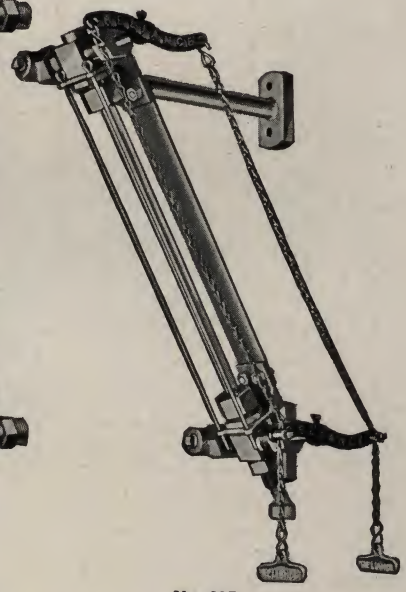
No. 502R



No. 603



Nos. 402R and 403R



No. 605

Chain operated, both valves at once, from floor, packing nuts and stem of bronze. Loose monel stem tip for easy-sure tightness when closing; ¾-inch tap in bottom boss for blow-off. Operating lever of semi-steel, steel chain sherardized, brass plated, cast metal handles. Pyrex ¾-inch tubular glass furnished, two guard-rods and two 5-foot chains with handles.

No. 402-R with ½-inch pipe thread connection.

No. 403-R with ¾-inch pipe thread connection.

No. 502-R with flanged connection.

No. 603 tiltview; recommended for easier visibility where gauges are high above the floor; bronze seat and stems; ⅜-inch tapped steel ell for vertical blow-off; ¾-inch pipe connection.

No. 605 flanged tiltview; ⅝-inch welded flanged connections. Bronze seats and stems; ⅜-inch tapped steel ell for vertical blow-off.

No.	402R	403R	502R	603	605
Each	$16.00	16.00	32.00	44.00	50.00
Connection....inches	½	¾	..	¾	..

Extra Chain.....per foot **$.05**

Reliance Prismatic Water Gauges

For Pressures up to 350 Pounds

Gives sharp, distinct gauge readings on boilers, heaters, surge tanks, etc.

Used in oil and water service in place of tubular glass.

Liquid appears black, steam or air appears white—due to light refraction from cast grooves on glass.

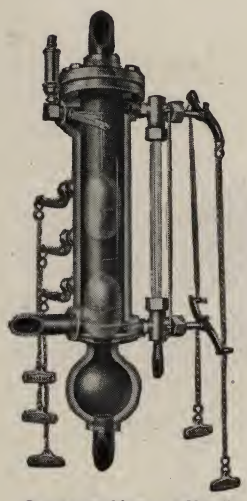
Made of high quality heat-treated glass—will not shatter and fly from housing. Semi-steel housing body of ample proportions. Clamping principle holds glass without strain.

Made in five body lengths from 7⅞ to 13¾ inches.

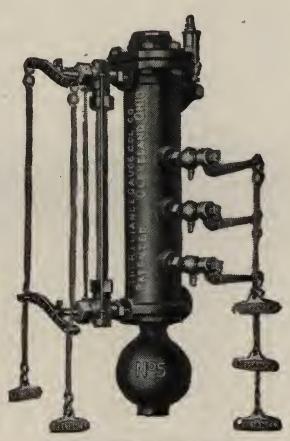
Further information and prices on request.

Reliance Safety Water Columns

For 250 Pounds Working Steam Pressure



Sectional View of No. 5 Safety Water Column



No. 5 with Gauge Cocks and Water Gauge, Screwed Connections

A Reliance Alarm, boiler water column, provides safe control of boiler water level through better supervision. It sounds whistle or electric signal when water rises above upper gauge cock or falls below lower gauge cock. Prevents damage to prime mover from carry-over; prevents explosion or boiler damage from low water.

Made as combined high and low alarms or high or low. Actuated by monel floats, operation is extremely sensitive. Whistle valve has stainless seats and discs for long wear. Column body and cap of semi-steel, joined with metal gasket.

No.	*1	*2	**5	6	7
With Gauge Cocks and Water Gauges ea.	$61.00	58.00	63.00	59.00	76.00
Variation between Alarms in.	6	Low Only	8	Low Only	12
Steam and Water Connection in.	1	1	1¼	1¼	1½
Water Gauge Connection, Center to Center in.	13½	13½	18	15¾	21
Size in.	½	½	¾	¾	¾
Size of Blow-Off in.	¾	¾	¾	¾	¾
Gauge Cock Connection, Center to center in.	3	3	4	4	6
Size in.	½	½	¾	¾	¾
Center Water Conn. to Column Top in.	16¼	16¼	21	19	25¾
Length Over All in.	23¼	23¼	29¾	28	36
Approx. Ship. Wt. lb.	45	45	70	65	120

*200 pounds pressure only.

**May be furnished without alarms, $53.00.

Always specify large ported valves for pressures below 25 pounds.

Air Cocks

Tee Handle Straight Nose—Male End

With Round Shoulder

No.	6	7
Each	$.40	.45
Size inches	⅛	¼

With Hexagon Shoulder

No.	8	9	10	63	64
Each	$.50	.60	.90	.45	.50
Size in.	⅜	½	¾	⅛	¼

Lever Handle Straight Nose—Male End

With Round Shoulder

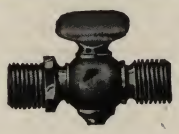
No.	12	13
Each	$.55	.60
Size inches	⅛	¼

With Hexagon Shoulder

No.	14	15	16	65	66
Each	$.65	.75	1.15	.60	.65
Size in.	⅜	½	¾	⅛	¼

Male Both Ends

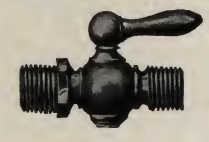
With Hexagon Shoulder



No.	18	19	20	21
Each	$.55	.65	.75	.90
Size in.	⅛	¼	⅜	½

Male Both Ends

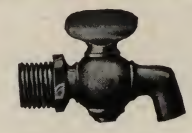
With Hexagon Shoulder



No.	22	23	24	25
Each	$.70	.80	.90	1.05
Size in.	⅛	¼	⅜	½

Bibb Nose—Male End

With Hexagon Shoulder



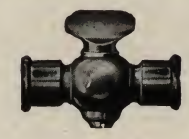
No.	26	27	28	33
Each	$.70	.80	.90	1.00
Size in.	⅛	¼	⅜	½

Bibb Nose—Male End

With Hexagon Shoulder

No.	29	30	31	32
Each	$.85	.95	1.05	1.15
Size in.	⅛	¼	⅜	½

Female Both Ends



No.	37	38	39	39A
Each	$.65	.70	.85	1.10
Size in.	⅛	¼	⅜	½

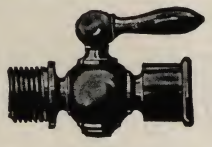
Female Both Ends

No.	43	44	45	45A
Each	$.80	.85	1.00	1.25
Size in.	⅛	¼	⅜	½

Male and Female Ends

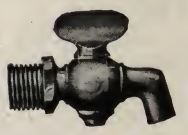
No.	40	41	42	42A
Each	$.75	.80	.90	1.15
Size in.	⅛	¼	⅜	½

Male and Female Ends



No.	46	47	48	48A
Each	$.90	.95	1.05	1.30
Size in.	⅛	¼	⅜	½

Stainless Steel Drain Cocks



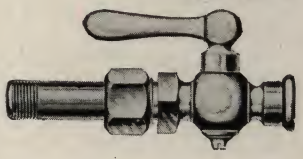
Lever or Tee Handle

Bibb Nose—Male Thread
18-8 (C .07-10)

Size.....inches	3/8	1/2	3/4	1	1 1/4	1 1/2
Each.....	$13.50	14.30	16.00	20.70	22.30	25.80

Steam Gage Cocks

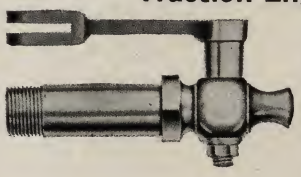
Female with Male Union



Tee or Lever Handle

Size.....inches	1/4
Tee Handle, Finished.....each	$1.75
Lever Handle, Finished.....each	1.90

Traction Engine Cocks

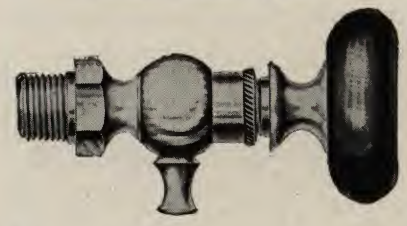


Made of brass.

No.....	86	87	88
Sh. Shank ...each	$1.15	$1.30	$1.40
Long Shank ...each	1.45	1.55	1.70
Size...in.	1/8	1/4	3/8
Dia. Blank Shank. in.	3/8	1/2	5/8

Compression Gauge Cocks

Without Stuffing Box



Threaded for iron pipe.
No. 2 packed 12 in a box, all others 6 in a box.

No.....	2	3	4
Each.....	$.95	1.00	1.25
Threaded for Iron Pipe Size.....in.	3/8	1/2	3/4
Weight.....ounces	5 1/2	8 1/4	10

Compression Gauge Cocks

With Stuffing Box
For 150 Pounds Pressure

Threaded for iron pipe.

Packed 6 in a box.

No.....	5	6	7
Each.....	$1.20	1.30	1.45
Threaded for Iron Pipe Size.....in.	3/8	1/2	3/4
Weight.....ounces	6 3/4	8 3/4	10 3/4

Register Ball Gauge Cocks

Threaded for iron pipe. Wrapped in paper.

No.....	509	510	511
Each.....	$.90	.90	1.00
Size.....in.	3/8	1/2	3/4
Weight.....oz.	5 3/4	6 1/2	7 3/4

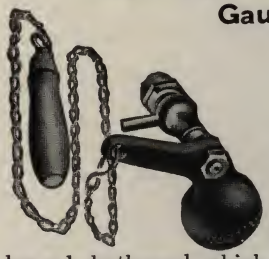
Reliance Gauge Cocks

For Pressures to 450 Pounds

Cock is made of high grade bronze with renewable stainless seats and cone discs, ground and lapped to microscopic glass-smooth finish giving extraordinary resistance to cutting action of steam and water. Design assures perfect alignment. Stainless spring holds valve leak-tight even at higher than rated pressure. Body and cap of high grade bronze; adjustable discharge nozzle; with brass S-hook.

No. **300**, 1/2-Inch.....each	$5.00
No. **301**, 3/4-Inch.....each	5.00
Chain, with Handles.....per foot	.05

Model JEL Lonergan Chain Pull Gauge Cocks



Weighted—Quick Opening—Self-Closing

Equipped with a quadruple thread, which by pulling the chain as far as possible will give a full-sized opening.

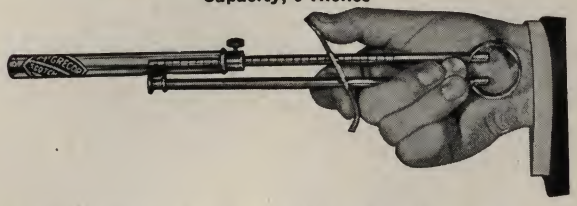
The valve pencil is made of soft metal especially prepared for continuous wear and the spindle has a hole through which the pencil can be dislodged when it is necessary to renew it. No regrinding is necessary.

Sizes, 1/2 and 3/4 inches.
Ball weight is made of cast iron japanned.
Furnished with 6 feet of chain and wood handle.

Model JEL, Brass.....each $4.00

Chesterton Gauge Glass Cutters

Capacity, 6 Inches



A handy nickel-plated tool with a sliding lever that can be placed close to the work to obtain more power. Steel cutting wheel.

Individually boxed and packed in cartons containing 1/2 dozen and dozen cartons. Shipping weight per dozen, 4 7/8 pounds.

Each.....	$2.00
Extra Cutter Wheels.....per dozen	2.40
Extra Pins.....per dozen	.20

Pyrex Broad Red Line High Pressure Gauge Glasses

This gauge glass has a broad transparent red stripe which is fused into the outer surface of the tube. It is a permanent part of the glass and will last as long as the gauge glass itself.

Because the red line is transparent, the gauge glass can be illuminated from the rear. This manner of illumination, plus the greater width of the red line, produces a brilliance that makes the liquid level height readily apparent from far greater distances than ever before.

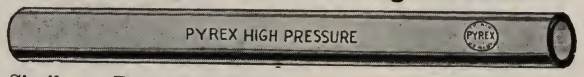
Length Inches	½ & ⅝-Inch O.D. per Doz.	¾-Inch O. D. per Doz.	⅞-Inch O. D. per Doz.	1-Inch O. D. per Doz.
8	$4.00	$5.60	$6.20	$8.40
9	4.50	6.30	7.10	9.40
10	5.00	7.00	8.00	10.40
11	5.40	7.40	8.60	11.20
12	6.00	8.40	10.00	12.40
13	6.40	9.00	10.60	13.60
14	6.60	9.60	11.00	14.80
15	7.00	10.00	11.80	15.60
16	7.80	11.40	12.60	17.00
17	8.00	11.80	13.40	18.00
18	8.60	12.20	14.20	19.00
19	9.00	13.00	15.00	20.00
20	10.00	14.00	16.40	21.40
21	10.50	14.40	16.80	21.90
22	11.00	14.80	17.20	22.40
23	11.50	15.80	18.60	23.60
24	12.00	16.80	20.00	24.80

Intermediate lengths are charged at the price of the next longer glass of the same diameter.

Safe Working Steam Pressures

Length.....inches	Up to 10	11–20	21–30
Pound per Square Inch.....	500	420	340

Pyrex High Pressure Gauge Glasses



Similar to Pyrex Red Line Gauge Glasses except that there is no red line.

Length Inches	Per Dozen — Outside Diameter, Inches: ½, ⅝	¾	⅞	1	1¼	1½
8	$4.00	$5.60	$6.20	$8.40	$13.60	$24.80
9	4.50	6.30	7.10	9.40	15.30	27.90
10	5.00	7.00	8.00	10.40	17.00	31.00
11	5.40	7.40	8.60	11.20	18.70	34.10
12	6.00	8.40	10.00	12.40	20.40	37.20
13	6.40	9.00	10.60	13.60	22.10	40.30
14	6.60	9.60	11.00	14.80	23.80	43.40
15	7.00	10.00	11.80	15.60	25.50	46.50
16	7.80	11.40	12.60	17.00	27.20	49.60
17	8.00	11.80	13.40	18.00	28.90	52.70
18	8.60	12.20	14.20	19.00	30.60	55.80
19	9.00	13.00	15.00	20.00	32.30	58.90
20	10.00	14.00	16.40	21.40	34.00	62.00
21	10.50	14.40	16.80	21.90	35.70	65.10
22	11.00	14.80	17.20	22.40	37.40	68.20
23	11.50	15.80	18.60	23.60	39.10	71.30
24	12.00	16.80	20.00	24.80	40.80	74.40
30	14.00	20.00	23.40	31.20	51.00	93.00
36	17.20	24.40	28.40	38.00	61.20	111.60
42	20.30	29.30	33.10	44.50	71.40	130.20
48	23.40	34.20	37.80	51.00	81.60	148.80
54	25.70	37.10	42.50	56.70	91.80	167.40
60	28.00	40.00	47.20	62.40	102.00	186.00
66	31.20	44.40	52.00	69.20	112.20	204.60
72	34.40	48.80	56.80	76.00	122.40	223.20

Intermediate lengths take price of next longer tube of same diameter. For prices of glasses longer than 72 inches multiply price of 12-inch size by length required in feet. No allowance made for fractions of a foot. Maximum length 180 inches.

Safe Steam Working Pressures

Length.....inches	10	20	30	40	50	60	70
Pounds per Square Inch	500	420	340	290	220	180	140

Corning Standard Gauge Glasses

This gauge glass is made especially for moderate pressure service on boilers, vats and tanks, coffee urns, etc. where pressures do not exceed the maximum recommended. This tube is made of glass that retains its crystal clearness over long periods.

Glasses up to 36 inches in length are put up 6 in a package; all other sizes listed, 3 in a package. Sizes over 72 inches are individually packed.

Length Inches	½-Inch O.D. per Doz.	⅝-Inch O.D. per Doz.	¾-Inch O.D. per Doz.	Length Inches	½-Inch O.D. per Doz.	⅝-Inch O.D. per Doz.	¾-Inch O.D. per Doz.
8	$1.92	$2.52	$3.00	21	$4.80	$6.36	$7.80
9	2.04	2.76	3.36	22	5.04	6.60	8.16
10	2.28	3.00	3.60	23	5.28	6.96	8.52
11	2.64	3.24	3.96	24	5.52	7.20	8.88
12	2.76	3.60	4.32	30	6.96	9.00	11.16
13	3.00	3.84	4.80	36	8.28	10.80	13.44
14	3.24	4.20	5.16	42	9.72	12.60	15.72
15	3.48	4.44	5.52	48	11.04	14.52	18.00
16	3.72	4.80	5.88	54	12.48	16.32	20.28
17	3.96	5.04	6.24	60	13.80	18.12	22.56
18	4.20	5.40	6.60	66	15.24	20.04	24.84
19	4.44	5.64	7.08	72	16.56	21.84	27.12
20	4.68	6.00	7.44	..	.....	.....	.....

Intermediate lengths are charged at the price of the next longer listed glass of the same diameter. For prices on glasses longer than 72 inches, multiply the price of the 12-inch length by the number of feet in the length required. Fractions of a foot are priced as a full foot. Maximum length obtainable, 180 inches.

Maximum Recommended Working Pressures

Length Inches	Lbs. per Sq. In.	Length Inches	Lbs. per Sq. In.
Up to 30	200	51 to 60	130
31 to 40	180	61 to 70	100
41 to 50	160	.....	...

Marvel Gauge Glass Washers

Closed edge of washer always goes into nut first, leaving open edge exposed. Nut is screwed up, thumb and finger tight. Steam, or other pressure is turned on and immediately washer has expanded, inner lip against glass, forming cushion, and outer wall against nut, closing every crevice. Solid section of washer is made thin enough to allow glass to become adjusted to its proper alignment without any danger of breaking.

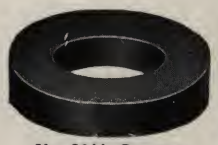
No.	Per Doz.	Size Glass In.	O.D. In.	Outside Depth In.	No.	Per Doz.	Size Glass In.	O.D. In.	Outside Depth In.
30	$.80	3/8	13/16	1/4	47	1.40	3/4	1 1/16	3/4
1	.80	1/2	13/16	9/32	24	1.00	3/4	1 3/32	13/32
21	.80	1/2	7/8	3/8	14	1.00	3/4	1 1/8	3/8
2	1.00	1/2	7/8	1/2	39	1.20	3/4	1 1/8	7/16
29	1.00	1/2	1	5/16	33	1.20	3/4	1 1/8	1/2
28	1.00	1/2	1	3/8	17	1.40	3/4	1 1/8	5/8
34	1.60	1/2	1 7/16	3/8	54	1.60	3/4	1 1/8	7/8
19	.80	9/16	13/16	9/32	11	1.00	3/4	1 3/16	13/32
12	.80	9/16	27/32	19/32	22	.80	3/4	1 1/4	1/4
18	1.40	9/16	1 3/32	1/2	7	1.00	3/4	1 1/4	13/32
3	.80	5/8	7/8	9/32	53	1.20	3/4	1 1/4	1/2
52	.80	5/8	7/8	3/8	23	1.60	3/4	1 1/4	3/4
13	.80	5/8	15/16	9/32	8	1.20	3/4	1 5/16	13/32
9	1.20	5/8	15/16	9/16	16	1.60	3/4	1 5/16	5/8
4	.80	5/8	1	9/32	41	1.60	3/4	1 3/8	3/8
25	1.20	5/8	1	15/32	32	1.00	3/4	1 3/8	1/4
5	1.00	5/8	1 1/8	3/8	10	1.60	3/4	1 7/16	13/32
37	1.40	5/8	1 1/4	1/2	46	1.40	3/4	1 5/8	1/2
35	1.20	5/8	1 5/16	13/32	45	1.60	3/4	1 15/16	3/8
50	1.00	21/32	1 1/4	1/4	27	1.20	7/8	1 3/8	13/32
20	.80	11/16	1	9/32	40	1.60	31/32	1 3/4	3/8
51	1.00	11/16	1 1/8	3/8	48	1.80	31/32	1 3/4	7/16
42	1.20	11/16	1 3/16	7/16	26	1.60	1	1 5/8	1/2
44	1.40	11/16	1 3/8	3/8	38	1.80	1	1 1/2	1
31	.80	3/4	1	3/8	36	1.80	1 1/4	1 7/8	1 5/16
43	1.40	3/4	1	3/4	49	1.80	1 7/8	2 1/4	3/4
6	.80	3/4	1 1/16	9/32	..	....	...	...	....
15	1.20	3/4	1 1/16	1/2	..	....	...	...	....

Conical Washers and Gauge Glass Preservers

The special rubber compound used in these washers and preservers retains its elasticity and resists the action of steam.

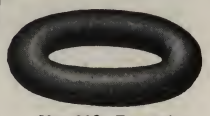
No.	2	3	4	5	6	8
To Fit Glasses....in.	3/4	1/2	3/4	5/8	5/8	3/4
Diam. at Base....in.	1 1/16	1 3/16	1 1/8	31/32	1 3/8	1 1/2
Price .....per dozen	$3.25	2.50	3.40	3.00	3.00	3.50

Rubber Gauge Glass Washers



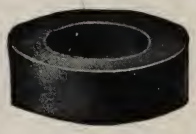
No. 2011, Square

Size In.	No. 2011 Square per Doz.	No. 689 Round per Doz.
1/2	....	....
5/8	....	....
3/4	....	....



No. 689, Round

Extra Thick Gage Glass Gaskets



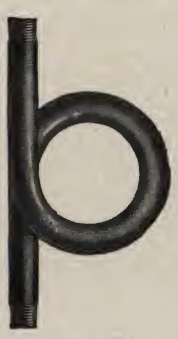
Recommended for working pressures running upwards of 300 pounds per square inch.

More serviceable than two thinner washers.

O. D. Glass Size.....inches	1/2	5/8	3/4	1
Per Dozen.....	$.50	.50	.75	1.00

Ashcroft Steam Gauge Siphons

Type 1098



Type 1100

Connection, 1/4 inch. I.P.S.

Brass siphons are good for 250 pounds; iron, for 500 pounds pressure.

	Type 1098, Coil Pipe	Type 1100, Pig Tail
Iron.....	$.40	$.30
Brass.....	1.00	.75
Nickel-Plated Dip.....	1.50	1.25
Chromium-Plated Dip.....	1.75	1.50

Seamless Steel Siphons

1/4 or 1/2-Inch, Extra Heavy, 1000 Lb. and 850°F. each **$1.50**
1/2-Inch, Double Extra Heavy, 2000 Lb. and 850°F. each **4.00**

Model GJ Lonergan Gauge Jacks

A gauge jack or hand puller should always be used in removing the hand from a gauge to prevent injury to the movement.

For all sizes, 2 1/2 to 12 inches.

Model GJ, Nickel Plated.....each **$1.50**

Sherman Fusible Plugs

Made from high grade brass and filled with pure tin.

The tube plugs and long pattern plugs, 1/2 inch and larger, comply with the Massachusetts Steam Boiler Rules when marked "MASS. STD." and will be so marked when specified.

In ordering always give number and size.

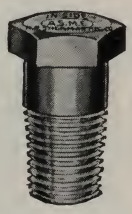
Short Pattern

No. 99 Fireside (Outside)
No. 99A Waterside (Inside)
For Low Pressures Only

Size In.	Each	Wt., Lb. per Doz.
3/8	$.50	1 1/4
1/2	.60	2
3/4	.75	3 1/4
1	1.00	5 3/4
1 1/4	1.50	10 3/4
1 1/2	2.00	16 1/2

No. 99F Tube Plugs

For Working Pressures Not Exceeding 225 Pounds



Size In.	Each	Wt., Lb. per Doz.
3/8	$.90	2
1/2	1.20	3

Long Pattern

Fireside (Outside)
No. 99B—For Working Pressures Not Exceeding 175 Pounds
No. 99D—For Working Pressures Over 175 Pounds and Not Exceeding 225 Pounds

Waterside (Inside)
No. 99C—For Working Pressures Not Exceeding 175 Pounds
No. 99E—For Working Pressures Over 175 Pounds and Not Exceeding 225 Pounds

Size In.	No. 99B Each	No. 99D Each	Wt., Lb. per Doz.	Size In.	No. 99C Each	No. 99E Each	Wt., Lb. per Doz.
3/8	$1.10	....	2	3/8	$1.10	....	2
1/2	1.20	$1.20	3 1/2	1/2	1.20	$1.20	3 1/2
3/4	1.50	1.50	5 1/2	3/4	1.50	1.50	5 1/2
1	2.00	2.00	9	1	2.00	2.00	9
1 1/4	3.00	....	18	1 1/4	3.00	....	18
1 1/2	4.00	....	25 1/2	1 1/2	4.00	....	25 1/2

Sherman Fusible Plugs

Approved for Marine, A.S.M.E. and A.P.I. Service

No. 991
Fire Side Plug
Outside Type

Every approved plug is stamped with a heat number on the fusible core. This is the mark of approval of the Bureau of Marine Inspection and Navigation and signifies that samples of each heat have been approved.

Each plug stamped A.S.M.E. Std. conforms with the latest A.S.M.E. Code specifications. A.P.I. Field Boiler Code requirements are the same as the A.S.M.E.

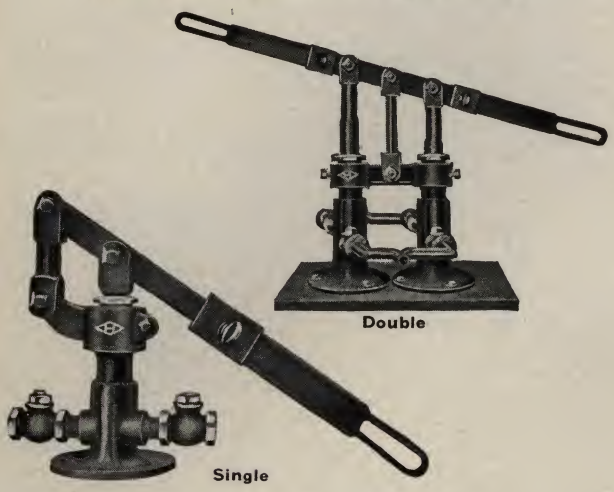
No. 992
Water Side Plug
Inside Type

The A.S.M.E. Code does not recommend the use of fusible plugs when boilers are operated at working pressures in excess of 250 pounds per square inch, and the regulations of the Bureau of Marine Inspection and Navigation prohibit use of plugs when temperatures exceed 425°F.

Made of bronze and filled with pure tin. Threads are extra long, standard iron pipe size on the small end, and will fit standard pipe threaded holes and holes that have been tapped or worn oversize.

Size.....inches	3/8	1/2	3/4	1
No. 991.....each	.....	$1.20	$1.50	$2.00
No. 992.....each	$1.10	1.20	1.50	2.00
Smallest Diam. of Core..inches	3/8	3/8	3/8	3/8
Weight per Dozen.....pounds	2 3/4	4 1/2	7 1/2	12

Henderer Hydraulic Test Pumps

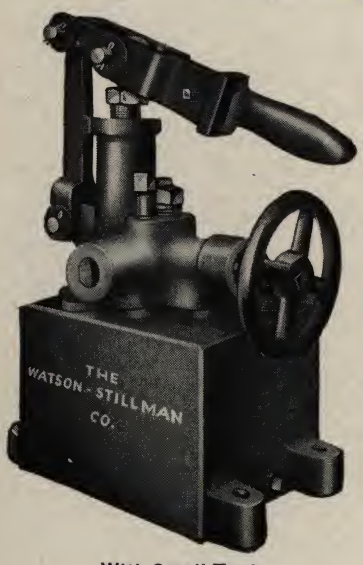


These pumps will generate a cold water pressure of 500 pounds per square inch. They are adapted for testing boilers, cleaning pipes, etc. The single pump has a revolving top, and can be worked in any position. Both pumps are fitted with sectional levers which can be adjusted to give greater leverage.

	Single		Double				
No.	Each	Wt. Lb.	Each	Wt. Lb.	Plunger Diam. In.	Suc. & Disch. In.	Length Stroke In.
1	.....	22	.....	...	1	¾	4
2	.....	33	.....	...	1½	1	4
3	.....	57	.....	148	1¾	1¼	6
4	.....	72	.....	180	2	1½	6

Watson-Stillman High Pressure Hand Pumps

Single Plunger



With Small Tank

A self-contained unit for general testing purposes, operating jacks and other small hydraulic tools.

Ruggedly constructed parts are all accessible for inspection or repair.

Hardened tool steel or bronze plunger; bronze pump body; high grade cast iron reservoir; and bronze valves, seats and bonnets.

Fitted with 26-inch extension lever, pressure release control wheel, and standard left-hand pressure connection.

Can be furnished with small tank, capacity of 180 cubic inches; medium tank, capacity of 400 cubic inches; or large tank, capacity of 1500 cubic inches. When ordering, be sure to state type of tank desired.

Double plunger hand pumps for operating jacks and other small hydraulic machines, that require high speed for the initial movement, can also be furnished; complete information upon request.

Max. Press...lb. per sq. in.	10000	8000	6000	3000	1500
Plunger Diam.....inches	9/16	⅝	¾	1	1½
Stroke.....inches	2	2	2	2	2
Pipe Connection....inches	½	½	½	¾	¾

Type 1300 Ashcroft Dead Weight Pressure Gauge Testers

For Testing Pressure Gauges Up to 2500 Pounds

Pressure measurements are obtained by balancing calibrated weights on a piston of exactly known area. The guaranteed accuracy is 1/10 of 1 per cent of the actual reading.

The lowest pressure which can be tested is that corresponding to the weight piston and weight platform assembly. The tester for 200, 300, and 500-pound ranges has a piston of ⅛ square inch area, and produces a lowest pressure reading of 5 pounds. The tester for 800 and 1000-pound ranges has a piston of 1/16 square inch area, and produces a reading of 10 pounds. The tester for 1500, 2000, and 2500-pound ranges has a piston of 1/40 square inch area, and produces a pressure of 25 pounds.

The minimum standard weight value for testers up to 500-pound range, is 5 pounds; but four 1-pound weights can be supplied upon special request, to enable testing in increments of 1 pound above the first 5 pounds.

Similarly, the minimum weight value on the 800 and 1000-pound testers is 10 pounds; but four 2-pound weights can be furnished to enable testing in increments of 2 pounds.

On the 1500, 2000, and 2500-pound testers, the minimum standard weight value is 25 pounds; but two 10-pound and one 5-pound weights can be supplied extra to test in increments of 5 pounds.

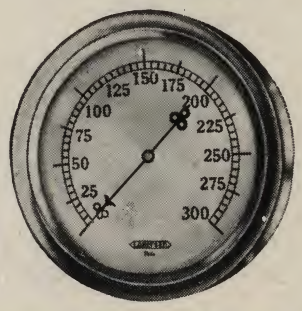
The weights are die cast.

The tester body and cylinders are brass, secured firmly to a cast iron base, which in turn is mounted on a wood base board. The compression screw is bronze, working in a steel bonnet. The integral needle valves for the oil reservoir, and shut off to the gauge connection are steel. All steel parts are black oxidized finish, and the general finish of the tester complete is black crinkle finish. The dead weight piston is steel, finely ground, and lapped into a bronze cylinder.

Complete tester and accessories are packed in an olive drab wooden box, and the weights in a separate olive drab wooden box or boxes. The accessories supplied are: one single-end wrench, one double-end wrench, one screw driver, one hand jack and hand set, one ⅛-inch female connection nipple, one ¼-inch female connection nipple, one ¼-inch male connection nipple, one ½-inch female connection nipple, two extra leather gaskets for connections, and one can of mineral oil (6 ounces).

Capacity...lb.	200	300	500	800	1000	1500	2000	2500
Each.....	$120.	130.	145.	160.	175.	190.	205.	220.
Shipping Wt, Complete.lb.	65	80	105	95	105	80	95	105

Model GS Lonergan Single Spring Pressure Gauges



Standard single seamless drawn bourbon tube gauges for steam, water, or air pressures.

Pressure gauges graduated to any pressure not exceeding 1000 pounds.

Sizes from 2½ to 5 inches inclusive, are made with close slip rings instead of the flare rings shown in illustration.

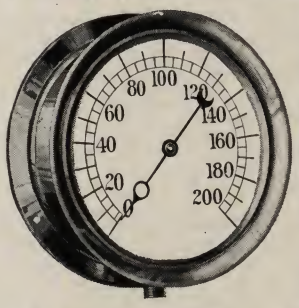
When used under steam pressure, always connect with a siphon.

Size Dial In.	Iron Case Brass Ring Each	Iron Case N. P. Ring Each	Finished Brass Case Each	N. P. Case Each	Finished Brass Deep Case Each	N. P. Deep Case Each
12	$50.00	$51.50	$75.00	$79.00	$80.00	$84.00
10	32.00	33.00	40.00	43.00	44.00	47.00
8½	22.00	22.75	30.00	32.50	33.50	36.00
6¾	16.00	16.60	20.00	22.00	23.00	25.00
6	13.00	13.50	16.00	17.50	18.50	20.00
5	8.00	8.20	11.00	12.00	.....	.....
4½	8.00	8.20	10.00	11.00	.....	.....
3½	7.00	7.18	9.00	9.75	.....	.....
3	6.00	6.15	8.00	8.60	.....	.....
2½	6.00	6.15	8.00	8.60	.....	.....

Double Spring Pressure Gauges

Cast Flanged Case

For use on service where excessive fluctuation of pressure or unusually severe vibration is encountered and where the pressure medium will not deteriorate brass.



Standard dial ranges available up to 2000 pounds. Should be graduated to double the actual working pressure. Standard with ¼-inch I.P.S. male bottom connection. Supplied in other standard pipe connection sizes and in lower back connection.

One-piece double bourdon tube of drawn seamless tubing. Non-corrosive movement with cast, hard bronze, extra wide, machine-cut gearing with bronze bushed bearings. White enamel dial, black numerals, graduations and lettering. Silver finish dial or black dial with white numerals, etc. on special order.

Furnished without cock. Prices for gauges graduated to 750 pounds or less. Cast plain case available.

	Black Iron Case					†Brass Case	
Size Dial In.	Black Ring Each	Pol. Brass Ring Each	N.P. Ring Each	With Screwed-On Ring Extra	For FM Flush Mounted Extra	Pol. Case Screwed Ring Each	N.P. Case Screwed Ring Each
3½	$15.50	$15.50	$15.90	$3.00	$3.20	$20.70	$22.60
4½	*16.20	16.20	16.55	3.20	3.20	22.00	24.40
5	17.90	17.90	18.25	3.60	3.60	23.90	26.75
6	*23.45	23.45	25.55	4.00	4.00	33.40	37.20
8	*40.55	40.55	41.80	4.80	4.80	64.10	67.90
10	58.80	58.80	63.90	6.40	6.40	85.00	90.70
12	92.80	92.80	94.50	6.40	6.40	149.60	161.00
16	176.00	176.00	180.00	....	....	276.00	292.00

For higher pressures up to 2000 pounds or less, add 25%.

*Available in phenol case at the following extra charges: 4½-inch, $3.00; 6-inch, $3.50; 8-inch, $4.00.

†Prices apply for FM flush mounted type also.

Model GV Lonergan Single Spring Vacuum Gauges

Standard single seamless drawn bourbon tube gauges for vacuum.

Gauges graduated to 30-inch vacuum.

Sizes from 2½ to 5 inches inclusive, are made with close slip rings instead of flare ring shown in illustration.

Size Dial In.	Iron Case Brass Ring Each	Iron Case N. P. Ring Each	Finished Brass Case Each	N. P. Case Each	Finished Brass Deep Case Each	N. P. Deep Case Each
12	$50.00	$51.50	$75.00	$79.00	$80.00	$84.00
10	32.00	33.00	40.00	43.00	44.00	47.00
8½	22.00	22.75	30.00	32.50	33.50	36.00
6¾	16.00	16.60	20.00	22.00	23.00	25.00
6	13.00	13.50	16.00	17.50	.....	.....
5	8.00	8.20	11.00	12.00	.....	.....
4½	8.00	8.20	10.00	11.00	.....	.....
3½	7.00	7.18	9.00	9.75	.....	.....
3	6.00	6.15	8.00	8.60	.....	.....
2½	6.00	6.15	8.00	8.60	.....	.....

Model GPV Lonergan Compound Pressure and Vacuum Gauges

Generally used on compound engines, receivers and heating systems.

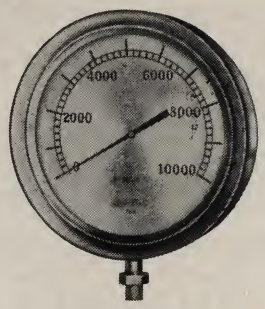
Pressure side of gauge generally graduated to 15, 30 or 60 pounds, but can be scaled to any pressure not exceeding 500 pounds.

When used on steam installations, always connect with a siphon.

Prices include cock.

Size Dial In.	Iron Case Brass Ring Each	Iron Case N.P. Ring Each	Finished Brass Case Each	N. P. Case Each	Finished Brass Deep Case Each	N.P. Deep Case Each
12	$60.00	$61.50	$80.00	$84.00	$85.00	$89.00
10	40.00	41.00	50.00	53.00	54.00	57.00
8½	30.00	30.75	40.00	42.50	43.50	46.00
6¾	20.00	20.60	25.00	27.00	28.00	30.00
6	16.00	16.50	20.00	21.50	23.00	24.50
5	14.00	14.25	16.00	17.25	.....	.....
4½	12.00	12.20	14.00	15.00	.....	.....
3½	10.00	10.18	12.00	12.75	.....	.....

Model GH Lonergan Hydraulic Gauges



Can be graduated to any pressure not exceeding 30,000 pounds per square inch. Standard graduations up to 20,000 pounds per square inch.

Has ½-inch pipe thread connection and hexagon nuts on sockets.

In ordering, state maximum pressure gauge is to be graduated to, and unless diameter of ram on press is given, gauge will be graduated to pounds pressure per square inch only.

Prices do not include cock.

Size Dial Inches	Iron Case Brass Ring Each	Iron Case N. P. Ring Each	Finished Brass Case Each	N. P. Case Each
12	$110.00	$111.50	$125.00	$129.00
10	90.00	91.00	100.00	103.00
8½	70.00	70.75	80.00	82.50
6¾	50.00	50.60	60.00	62.00
6	35.00	35.50	40.00	41.50
5	30.00	30.50	35.00	36.00
4½	25.00	25.50	30.00	31.00

No. BLGV Lonergan Vacuum Gauges

For indicating vacuum reading by inches.

Graduation, 30 inches.

Connection, ¼-inch male iron pipe thread.

Size Dial In.	Steel Case Each	Brass Case Each	N.P. Brass Case Each
2½	$6.00	$8.00	$8.60
3½	7.00	9.00	9.75
4½	8.00	10.00	11.00
5	8.00	11.00	12.00

Model BLGS Lonergan Pressure Gauges

A standard gauge, for indicating steam, air, water and other pressures.

Standard graduations.

Connection, ¼-inch male i.p.

Size Dial In.	Each Steel Case	Brass Case	N.P. Brass Case
5	$8.00	$11.00	$12.00
4½	8.00	10.00	11.00
3½	7.00	9.00	9.75
2½	6.00	8.00	8.60

No. BLGA Lonergan Altitude Gauges

Indicates height of water in feet. Graduation 70 feet.

Pressed steel case, rust-proofed prior to enamel. White enamel coated tin dial, black figures.

Furnished with ¼-inch I.P.T. male connection.

Size Dial. In.	Steel Case Each	Brass Case Each	N.P. Brass Case Each
3½	$10.00	$12.00	$12.75
4½	12.00	14.00	15.00
5	12.00	14.00	15.00

Model BLGPV Lonergan Pressure and Vacuum Gauges

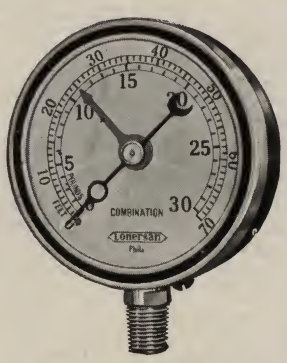
For indicating both pressure and vacuum on engines, heating systems, etc.

Graduation: 30-inch, 15 pounds; 30-inch, 30 pounds; 30-inch, 60 pounds.

Connection, ¼-inch male i.p.

Size Dial In.	Each Steel Case	Brass Case	N.P. Brass Case
5	$14.00	$16.00	$17.25
4½	12.00	14.00	15.00
3½	10.00	12.00	12.75

No. BLGW Lonergan Pressure or Altitude Gauges



A good gauge which answers for either pressure or altitude, or a combination of both.

Has a steel case.

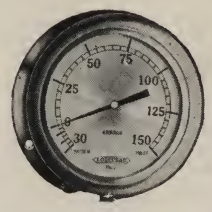
Graduation, 30 pounds, 70 feet.

Connection, ¼-inch male iron pipe.

Size Dial....in.	3½	4½
No. BLGW..ea.	$10.00	12.00

No. SAG Lonergan Ammonia Gages

Made for use with ammonia and other liquids affecting brass.



Steel tubes, carefully tempered, insure uniformity and reduce the chance of spring setting to a minimum. Has iron case, nickel-plated ring.

Non-corrosive movement of monel.

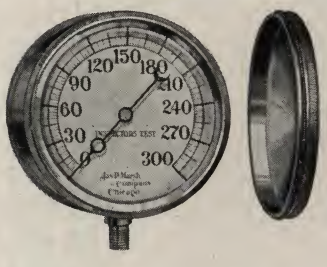
Back connection furnished, if desired.

Standard graduation for low pressure is 150 pounds pressure and 30 inches vacuum, and for high pressure 300 pounds pressure and 30 inches vacuum.

State graduation required.

Dial.....inches	4½	5	6	6¾	8½
Without Cock.ea.	$25.50	30.50	35.50	40.60	45.75

Inspectors' Test Gauges



Used by inspectors of steam boilers, air brakes and by master mechanics, chief engineers, etc. May be carried in the pocket.

Graduated by an open mercury column. Standard graduations are 300 to 500 pounds. Made in higher pressures. Polished or nickel-plated brass shallow case with close ring fitted with beveled glass. With or without metal protecting cover. Diameter 3 inches. Furnished with ¼-inch male bottom connection.

		Brass Case	N.P. Case
Without Cover	each	$27.30	$28.40
With Cover	each	29.30	32.65

No. 505R Drawn Case Retard Gauges

For use on house heating boilers. Conform to the legal requirements of those states which require gauges used on house heating boilers to be graduated to 30 pounds per square inch, and yet are capable of being read accurately in ounces of pressure.

Furnished with independent non-corrosive movement.

With ⅛ or ¼-inch lower male connection.

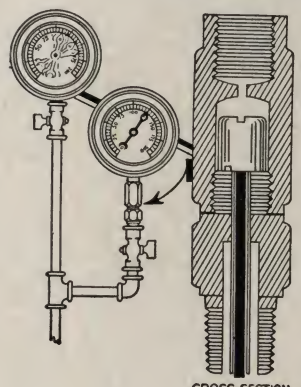
Can be furnished in larger sizes.

Net Price Gauges

Size Dial	inches	3½	4½	5
No. 505R, Steel Case, Black Finish	each	$1.84	2.18	3.38

For standard T-handle gauge cock ¼-inch female both ends add 30 cents.

Ray Pressure Snubbers



CROSS SECTION

This snubber should be used on flow meters, water level controls, regulating valves and all other gauges and instruments subjected to shock, surge or pulsation.

Gives accurate readings as only the mean of the actual pressure in the line is delivered to the instrument. Eliminates the necessity of frequent calibrating and adjusting.

Snubber is self-cleaning due to the rise and fall of the piston or clearing pin on each pulsation of the pump.

Packed in individual boxes containing 2 extra clearing pins; weight, less than ½ pound.

Standard ¼-Inch Pipe Size for Air, Water or Steam Pressure Range, 0–1500 Pounds ..... each	$5.00
Standard ¼-Inch Pipe Size for Oil, Pressure Range 0–1500 Pounds ..... each	5.00
Junior ¼-Inch Size for Air, Water or Steam, Pressure Range 0–500 Pounds ..... each	4.50
Junior ¼-Inch Pipe Size for Oil, Pressure Range 0–500 Pounds ..... each	4.50
Stainless Steel for ¼-In. Pipe Size for Refrigerants—Gasoline and Hot Oil, Press. Range 0–2000 Lbs. each	7.50
Stainless Steel for ¼-Inch Pipe Connection for Thick Oils of Sulphur Content, Pressure Range 0-2000 Lbs. . each	7.50
Hydraulic, ⅜ Inch Size, 100 Pounds to Extreme Pressures ..... each	6.00
Hydraulic, ½ Inch Size, 100 Pounds to Extreme Pressures ..... each	6.00

Thrush Special Combination Gauges and Thermometers

Indicates pressure, altitude and temperature of water in hot water heating system.

Tapping ½ inch.

Weight 2 lbs.

Each $4.50

Standard Hot Water Thermometers

No. 571

No. 572

Made of heavy gage steel, with scale reading imprinted directly on frame surface located in front plane of glass. Steel frame or scale plate is integral with supporting ferrule carried by well.

Glass tube is rearwardly housed by a recess in scale plate and does not project beyond front or rear plane of scale plate. This construction affords maximum strength and ease of reading.

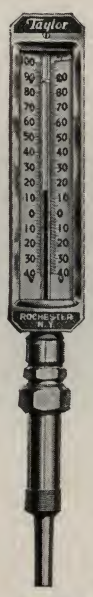
Standard graduations, 40° or 60° to 240° or 260°F. Finishes, vitreous enamel or Duco. Either mercury or red spirit tubes furnished.

Have ½-inch male connections.

No. 571, Straight Type	each	$.77
No. 572, Angle Type	each	.88

Taylor Industrial Thermometers

For Brine and Ammonia Lines



Straight Stem

Has insulation between scale-case and stem, preventing frosting over of the scale. A 2½-inch extension neck on the socket between the wrench head and thread provides space for pipe covering.

To prevent liquid ammonia from entering compressor it is important that there be a thermometer on the ammonia suction line, giving notice of any defect in the expansion valve, or superheating of the gas after it leaves the refrigerating coils.

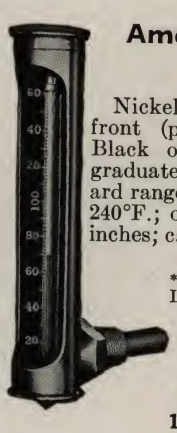
Temperature range —40° to +110° F.

With 3½-inch stem and No. P542 separable socket.

Regularly supplied with brass sockets for use in brine. If to be used in ammonia, specify steel sockets, which will be furnished without extra charge.

No.	Form	Scale Length Inches	Each
301	Straight	9	$21.05
302	Straight	7	19.85
306	Angle	9	22.00
307	Angle	7	20.75

American Small Cylindrical Thermometers



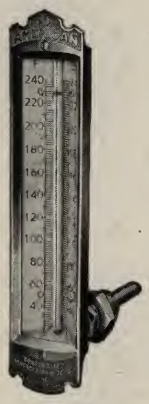
Nickel-plated brass case without glass front (polished brass to special order). Black oxidized scale with white figures graduated for any range up to 750°F. Standard ranges, −20 to 120°F.; 30 to 180°F.; 30 to 240°F.; others to order. Length scale, 4½ inches; case, 5¼ inches.

*Stem Length In.	No. 288 Straight Stem Each	No. 289 Angle Stem Each	Std. Conn. In.
1¾	$4.00	$4.80	⅜
3	5.60	6.40	½
6	7.20	8.00	½
9	8.80	9.60	½
12	10.40	11.20	½

*Including thread.

American Thermometers

No. 203 Straight Form



No. 206 Angle Form

For use in cold and hot water lines, oil lines, etc. Meets with Federal Specifications WW-P-541.

When ordering specify Type no.; size of scale; if required inclined or reclined, state degree of incline or recline; range (C or F); style of connection—fixed, union, separable socket, wall fitting (if latter is required, state thickness of wall); size of thread on connection; length of stem including thread—if with wall fitting, state length of stem inside wall, if stem will be exposed to corrosive action, state what metals best resist it; and what thermometer is to be used for.

Type 203, Straight Form

Size Scale Case.....in.	7	9	12
With Fixed Connection.....each	$23.50	$26.70	$32.00
With Union Connection.....each	28.80	32.00	37.30
With Separable Socket.....each	32.90	38.20	43.50
Length Stem Including Thread....in.	3½	3½	3½
Standard Pipe Thread.....in.	¾	¾	¾

Type 206, Angle Form

Size Scale Case.....in.	7	9	12
With Fixed Connection.....each	$26.70	$32.00	$37.30
With Union Connection.....each	32.00	37.30	42.60
With Separable Socket.....each	38.20	43.50	48.80
Length Stem Including Thread....in.	3½	3½	3½
Standard Pipe Thread.....in.	¾	¾	¾

Standard Temperature Ranges

—40 to 110°F.	30 to 240°F.	150 to 750°F.
—20 to 110°F.	30 to 300°F.	400 to 850°F.
0 to 100°F.	50 to 400°F.	200 to 950°F.
30 to 180°F.	100 to 550°F.	450 to 950°F.

For ranges above 750°F. add $15.50

American Thermometers are easy to read. For all temperatures up to 750°F. or equivalent, mercury-filled red reading tubes are used. With these tubes, the mercury appears as a broad red stripe.

For temperatures above 750°F. or equivalent, white back Boro Silicate glass is used.

American Industrial Thermometers are supplied with scales graduated in Fahrenheit, Centigrade or Reaumur. Unless otherwise specified, graduations will be in Fahrenheit.

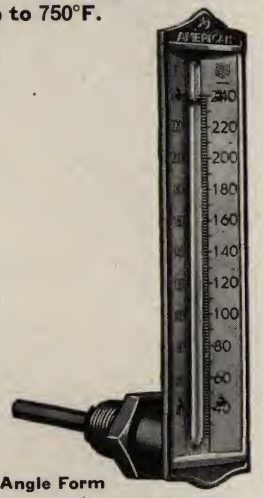
When desired, American Thermometers can be supplied with combination scales, showing the temperature and corresponding vapor pressure of steam, ammonia, or other liquids. Such thermometers are especially useful in canning and refrigeration plants.

For thermometers and other instruments not listed in this catalog, other more complete catalogs will be supplied upon request.

American Industrial Thermometers

V-Shaped Scale, Nickel-plated Iron Case, Open Front For Any Range up to 750°F.

Type 270 Straight Form



Type 272, Angle Form

Designed to supply the demand for a low priced industrial thermometer for general use. For use in cold and hot water lines, oil lines, brine lines, ammonia lines, condenser steam lines, etc.

Made either 7 or 9-inch V-shaped scale without glass front. Nickel-plated iron case. Scales are silver finish with bold, black figures, and can be graduated for any temperature range not exceeding 750°F. or equivalent to C. or R. Long stem thermometers are furnished with stems of brass as standard. Stems of steel can be furnished if required at no extra charge.

Standard stem length, 3½ inches including thread. Can be furnished with longer stems as listed.

Equipped with fixed, union or separable socket connection.

Standard Temperature Ranges

—40 to 110°F.	30 to 180°F.	50 to 400°F.
—20 to 110°F.	30 to 240°F.	100 to 550°F.
0 to 100°F.	30 to 300°F.	150 to 750°F.

For temperature ranges up to 650°F. or corresponding degrees C. or R.

For temperature ranges over 650°F. but not exceeding 750°F. or corresponding degrees C. or R., add $2.00.

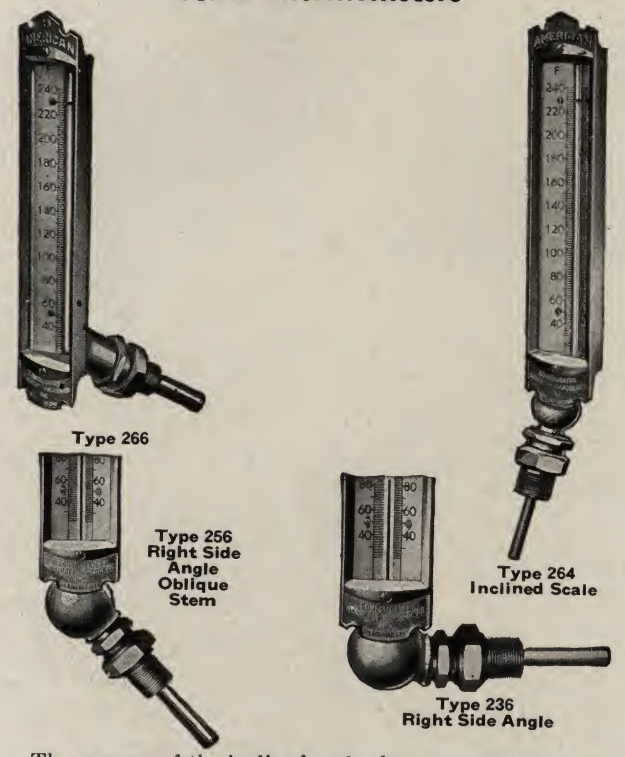
Type 270, Straight Stem

Fixed Connection		
Size of Scale Case.....inches	7	9
3½-Inch Std. Stem Length Incl. Thread..each	$16.00	$17.60
6-Inch Stem; Length Incl. Thread.....each	18.80	20.40
12-Inch Stem; Length Incl. Thread.....each	22.20	23.80
Union Connection		
Size of Scale Case.....inches	7	9
3½-Inch Std. Stem Length Incl. Thread..each	$20.00	$21.60
6-Inch Stem; Length Incl. Thread.....each	22.80	24.40
12-Inch Stem; Length Incl. Thread.....each	26.20	27.80
Separable Socket Connection		
Size of Scale Case.....inches	7	9
3½-Inch Std. Stem Length Incl. Thread..each	$28.60	$30.20
6-Inch Stem; Length Incl. Thread.....each	31.60	36.20
12-Inch Stem; Length Incl. Thread.....each	41.40	43.00

Type 272, Angle Stem

Fixed Connection		
Size of Scale Case.....inches	7	9
3½-Inch Std. Stem Length Incl. Thread.each	$20.50	$22.10
6-Inch Stem; Length Incl. Thread.....each	23.30	24.90
12-Inch Stem; Length Incl. Thread.....each	26.70	28.30
Union Connection		
Size of Scale Case.....inches	7	9
3½-Inch Std. Stem Length Incl. Thread..each	$26.20	$27.80
6-Inch Stem; Length Incl. Thread.....each	29.00	30.60
12-Inch Stem; Length Incl. Thread.....each	32.40	34.00
Separable Socket Connection		
Size of Scale Case.....inches	7	9
3½-Inch Std. Stem Length Incl. Thread..each	$33 00	$34.60
6-Inch Stem; Length Incl. Thread.....each	39.00	40.60
12-Inch Stem; Length Incl. Thread.....each	45.80	47.40

American Oblique and Side Angle Stem Thermometers



The purpose of the inclined scale thermometer is to make reading easy when the thermometer is installed above or below the level of the eye.

These thermometers are for use in cold and hot water lines, oil lines, brine lines, ammonia lines, etc.

When ordering, state desired angle of incline or recline.

Standard Temperature Ranges

−40 to 110°F.	30 to 240°F.	150 to 750°F.
−20 to 110°F.	30 to 300°F.	400 to 850°F.
0 to 100°F.	50 to 400°F.	200 to 950°F.
30 to 180°F.	100 to 550°F.	450 to 950°F.

Size Stem In.	Scale Case In.	Union Conn. Each	Separable Socket Conn. Each	Size Stem In.	Scale Case In.	Union Conn. Each	Separable Socket Conn.
3½	9	$37.30	$43.50	24	9	$49.30	$70.10
6	9	40.10	49.50	30	9	52.30	77.00
12	9	43.50	56.30	36	9	55.10	83.90
18	9	46.40	63.20	..	.	.....	....

Also supplied in 7 and 12-inch cases.

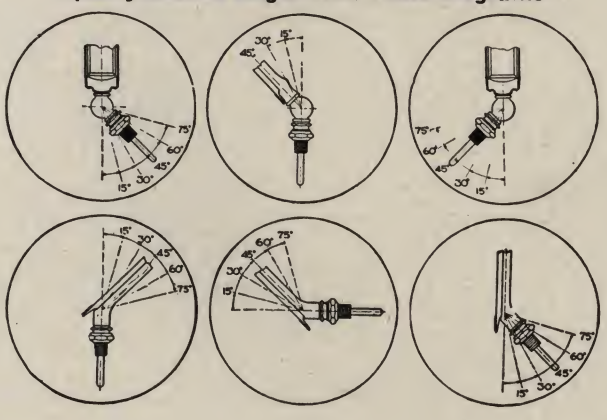
For 7-inch scale subtract $2.65 from 9-inch price.

For 12-inch scale add $2.65 to 9-inch price.

Extra for union connection stem length over 36 in., $1.70 for each additional 6 in. Extra for separable socket stem length over 36 in., $3.40 for each additional 6 in.

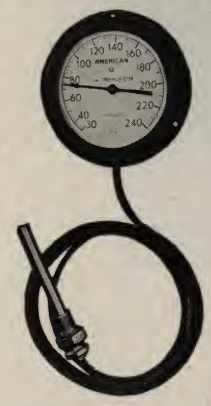
For ranges above 750°F. add $15.50.

Specify Desired Angle from These Diagrams



American Quality Dial Thermometers

Mercury Actuated Type



Useful in places where it is difficult to see the mercury-in-glass type of thermometer. Easy to read because the dial can be mounted in the most convenient place for the operator.

Can be furnished with tubing lengths up to 100 feet.

Has moisture-proof, phenol condensate case.

When ordering, select the most suitable range, determine the correct amount of tubing (5 feet is furnished as standard with the instrument), and state whether the thermometer is to be for water, air, brine, etc.

Standard Temperature Ranges

—10° to 110° F.	350° to 550° F.	0° to 200° C.
30° to 240° F.	200° to 1000° F.	0° to 300° C.
80° to 300° F.	0° to 100° C.	0° to 500° C.

Diameter Dial.....inches	4½	6
Type 6142BM, Ranges to 800°F.....each	$71.00	$85.00

For temperatures over 800° F. and up to 1000°F., add $18.00.

Price tubing longer than 5 feet, $1.70 per foot.

Furnished with plain bulb, no connection, at $5.00 less.

American Any Angle Dial Thermometers

Type 608B

Provides an easier means of reading important temperatures as dials can be tilted to the angle of greatest visibility. Designed to fit in places where glass thermometers are now installed but, because of their inaccessibility, never used. Also for use in locations where breakage of glass thermometers is excessive.

Easily substituted for any glass thermometer as the bulb fits the same size socket.

Made entirely of steel with all joints welded. Phenol condensate case is moisture proof and fume proof, and will retain its black finish indefinitely.

Quality grade has a plate glass front and nickel-plated bronze movement with monel bushings.

Dial is either 4½ or 6-inch. Pointer is micrometer adjustable. Stainless steel bulb.

Type 607B with standard union bushing connection.

Type 608B with stem and separable socket for use on pipes and tanks with or without lagging.

Type 609B with special adaptor to fit glass thermometer socket.

Standard Temperature Ranges

0 to 400°F.	200 to 1000°F.	0 to 200°C.
200 to 900°F.	.....	0 to 300°C.
400 to 900°F.	.....	0 to 500°C.

Diameter Dial.....inches	4½	6
Type 607B, with Union Bushing.....each	$71.00	$85.00
Type 608B, with Separable Socket.....each	92.00	106.00
Type 609B, with Adaptor.....each	78.00	92.00

Masoneilan Recording Thermometers

Measures the temperature and makes it readable at a convenient point. Provides a permanent record for future guidance.

Dust and weatherproof duralumin case. Projecting or flush panel mounting. Electrical connection, ½-inch conduit fitting on back of case for electric clock or signal system. Has 24-hour spring or electric clock. Electric clock is 110-volt a.c., 50 or 60 cycle, single phase. Tubing connection on bottom of case. Ordinarily furnished with 5-foot bronze armored copper capillary tubing.

Supplied with 100 standard single range charts, lock and keys, and ink set for each pen.

Vapor Pressure Type

For comparatively narrow temperature ranges this system is usually most desirable because of its sensitiveness, speed of response, small bulb size, and normal absence of the need of compensation for temperature changes around the flexible tubing and case. Copper bulb, sizes ⅜x2½ to ⅝x5 inches. Tubing length up to 300 feet depending on conditions. Increasing scale chart. Ranges, minus 30°F. to 600°F.

Gas Filled Type

For wide temperature ranges. In this system the bulb volume is made large in proportion to the volume of the capillary tubing in order to compensate for temperature changes along the tubing and case. The bulb size varies in direct proportion to the length of tubing and in inverse proportion to the total temperature interval of the chart. Has copper or 18-8 stainless steel bulb, size ⅝x5 to 1⅛x16 inches. Tubing length up to 250 feet. Uniform scale chart. Ranges, minus 150°F. to 1200°F.

Liquid Expansion Types

For narrow temperature ranges. Compensation for temperature variations along the tubing and case is provided by an additional thermal system. Where tubing lengths are less than 10 feet, this additional system may consist simply of a helical coil in the case; longer lengths of tubing, up to 150 feet, require the use of a second system paralleling the first with both capillary tubes included in the one armor. This second system is identical with the first except no bulb is used. In both types the helix of the second system compensates for ambient temperatures by "zeroing" the helix of the primary system. Copper bulb, sizes ⅜x1 to ⅜x4 inches. Uniform scale chart. Ranges, minus 150°F to 500°F.

No.	3010	3020	3030	3040
Vapor Pressure Type..each	$74.00	$120.00	$173.00	$236.00
Gas Filled Type.....each	79.50	131.00	189.50	258.00
Liquid Expansion Type each	79.50	131.00	189.50	258.00
Liquid Expansion Fully Compensated Type..each	89.50	151.00	.....	.....
No. Pens.....	1	2	3	4
No. Thermal Systems.....	1	2	3	4

No. 2010 Masoneilan Recording Pressure Gauges

These instruments provide an accurate means of making permanent chart records of process pressures. The 12-inch charts are exceptionally easy to read.

Parts are interchangeable and corrosion resistant.

Spring wound or electric clocks may be had as desired.

Furnished in attractive dust-tight duralumin cases for either projecting or flush mounting.

Recorders may be converted from one pressure range to another by merely changing the helical coil. Prices upon application.

U. S. Automatic Injectors

The regular style can be attached on either side of the boiler. Special styles to fit any condition of piping can be furnished. A distinctive feature is the drip cock (see illustration) which has the following special advantages.

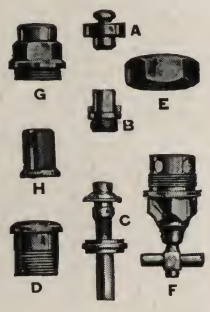
It drains the injector when not in use and thus prevents freezing.

By leaving it open injector can be started even though the check valve leaks. This is impossible without a drip cock. By opening the drip cock injector can be started with lower steam. By leaving it open when not in use the suction pipe is prevented from getting hot or the jet from liming up when the steam or check valve leaks. It makes it possible to take hot water out of a hot suction pipe on a long lift. It is always handy for drawing hot water for any purpose when the injector is working.

With feed water at 76 degrees Fahrenheit injector will start on a four foot lift with 15 pounds steam pressure and work up to 150 pounds steam pressure. Special High Test Injectors can be furnished in all sizes, upon order, and at no extra charge.

No.	Each	H. P. Based on Ordinary Tubular Boiler	H. P. Based on 30 Lbs. Water per H. P. per Hr.	Pipe Connections In.	Cap. Gal. per Hr. Max.	Min.
00	$13.00	1 to 3	1 to 4	¼	36	20
0	14.00	3 to 6	4 to 8	⅜	65	35
1	16.00	4 to 8	6 to 12	⅜	90	55
2	18.00	8 to 16	10 to 20	½	135	65
3	20.00	12 to 22	15 to 30	½	180	100
4	25.00	17 to 32	22 to 45	¾	260	140
5	30.00	20 to 45	25 to 60	¾	355	170
6	40.00	40 to 65	45 to 80	1	475	300
7	45.00	45 to 80	50 to 100	1	600	350
8	55.00	50 to 100	60 to 135	1¼	800	425
9	60.00	75 to 135	85 to 165	1¼	1000	525
10	75.00	100 to 180	125 to 235	1½	1400	800
11	90.00	115 to 255	150 to 320	1½	1900	950
12	110.00	160 to 320	200 to 380	2	2400	1300
13	125.00	200 to 400	250 to 500	2	3000	1600
14	150.00	300 to 500	325 to 550	2	3600	2000
15	175.00	350 to 550	400 to 600	2½	4000	2200
16	200.00	400 to 600	500 to 750	2½	4500	2500
17	400.00	600 to 900	750 to 1000	3	5800	3000

Repair Parts



When at the same steam pressure at which an injector has for a long time worked satisfactorily, it begins to dribble from overflow, it is an indication that the jets are either clogged by sediment or else worn.

If limed up they should be soaked in a bath of about one part of muriatic acid and eight parts water until clean.

If worn, new parts should be ordered.

In ordering parts, always give size and shop number, and specify the parts by the names given below; use no other terms.

No. of Injector	Each: D Tail Pipe	E, Tail Pipe Nut	A Stem Jet	B Suction Jet	C Delivery Tube	F Delivery Cap.	G, H Overflow Cap and Valve
00 to 3	$.60	$.60	$1.60	$1.00	$2.00	$2.00	$1.60
4 and 5	.70	.80	2.00	1.50	2.20	2.20	1.90
6 and 7	.80	1.00	2.30	2.50	2.90	2.90	2.00
8 and 9	1.00	1.30	2.70	3.00	3.50	3.50	2.50
10 and 11	1.50	1.70	3.20	3.50	4.00	4.00	3.00
12 to 14	2.00	2.40	4.00	4.00	5.00	5.00	4.00
15 to 17	2.40	3.00	5.00	5.00	8.00	8.00	7.00

Hancock Inspirators

Stationary Type

Works with high or low steam pressures on all lifts up to 25 feet, or when taking water under a head, with hot feed water as well as cold. One set of tubes lifts water and delivers it to second set, which in turn forces it into boiler.

Directions for Operation

To START.—Open the overflow valves, close forcer steam valve and open wide the starting valve in the steam line.

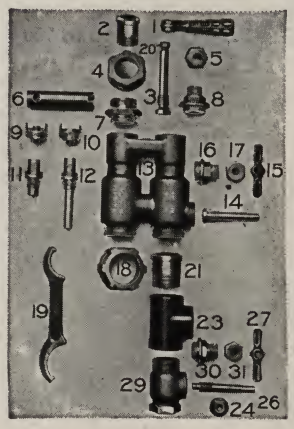
When water appears at the overflow, close the upper overflow valve, open forcer steam valve a quarter turn and close lower overflow valve.

To STOP.—Close starting valve in the steam pipe.

Size No.	Each	Size Steam Pipe Inches	Size Suction and Delivery Inches	Size Overflow Pipe Inches	Gallons per Hour 2 Ft. Lift 60 Lbs.	Weight Pounds
* 7½	$11.00	⅜	⅜	¼	60	3¾
* 8¾	12.00	⅜	½	⅜	90	4½
*10	12.00	⅜	½	⅜	120	4½
*12½	16.00	½	¾	½	220	6¾
*15	16.00	½	¾	½	300	6¾
*17½	27.00	¾	1	¾	420	9¾
*20	27.00	¾	1	¾	540	9¾
*22½	37.00	1	1¼	1	720	16
*25	37.00	1	1¼	1	900	16
30	50.00	1¼	1½	1¼	1260	22
35	60.00	1¼	1½	1¼	1740	25
40	70.00	1½	2	1½	2230	32
45	80.00	1½	2	1½	2820	37
50	98.00	2	2½	2	3480	54
55	115.00	2	2½	2	3650	62

*Furnished with suction coupling and a flat strainer.

Repairs for Hancock Stationary Inspirators



Part No.	Description	Size No. of Inspirator 7½ Ea.	8¾ 10 Ea.	12½ 15 Ea.	17½ 20 Ea.
1	Handle for Top Bonnet	$.55	$.55	$.70	$.80
2	Nipple for Steam Connection	.30	.30	.40	.75
3	Stem for Top Bonnet	.70	.70	1.20	1.90
4	Coupling for Steam Connection	.55	.55	.65	.90
5	Packing Nut for Top Bonnet	.40	.40	.50	.60
6	Jet Wrench	.40	.40	.45	.50
7	Union	.75	.75	1.00	1.30
8	Top Bonnet	.60	.60	1.00	1.50
9	Lifter Steam Jet	.50	.50	.75	1.00
10	Forcer Steam Jet	.65	.65	.75	.90
11	Lifter Tube	.90	.90	1.10	1.30
12	Forcer Tube	1.15	1.15	1.50	1.90
13	Body	....	....	....	....
14	Steam for Overflow Bonnet	.70	.70	1.20	1.70

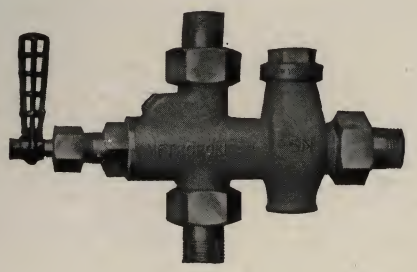
Repairs for Hancock Stationary Inspirators

Continued

Part No.	Description	Size No. of Inspirator 7½ Ea.	8¾, 10 Ea.	12½, 15 Ea.	17½, 20 Ea.
14b	Disc for Part 14	....	....	....	....
15	Handle for Overflow Bonnet	$.45	$.45	$.55	$.60
16	Overflow Bonnet	.60	.60	1.00	1.50
17	Packing Nut for Overflow Bonnet	.40	.40	.50	.55
18	Couplings for Suction and Delivery	.55	.65	.90	1.30
19	Spanner Wrench	...	...	...	.60
20	Nut for Top Bonnet Stem	.10	.10	.10	.15
21	Nipples for Suction and Delivery	.30	.40	.75	1.00
22	Mall. Iron Coupling for Suction	.25	.30	.35	.45
23	Mall. Iron Tee for Delivery	.25	.30	.35	.60
24	Swivel for Overflow Valve	...	...	....	....
26	Stem for Overflow Valve	.70	.70	1.20	1.90
27	Handle for Overflow Valve	.45	.45	.55	.60
29	Body for Overflow Valve	.85	.85	1.10	1.80
30	Bonnet for Overflow Valve	.70	.70	1.20	1.90
31	Packing Nut for Overflow Valve	.40	.40	.45	.55
32	Parts 1, 3, 5, and 8	2.20	2.20	3.40	4.70
33	Parts 14, 15, 16, and 17	2.10	2.10	3.20	4.40
34	Parts 24, 26, 27, 29, 30, and 31	3.00	3.00	4.50	6.75
35	Parts 9, 10, 11 and 12	3.10	3.10	3.90	4.80
36	Parts 18, 21, and 22	1.00	1.30	2.00	2.75
37	Parts 18, 21, 23, and 34	4.00	4.30	6.50	9.50

Part No.	Description	Size No. of Inspirator 22½,25 Ea.	30,35 Ea.	40,45 Ea.	50,55 Ea.
1	Handle for Top Bonnet	$1.10	$1.40	$1.80	$2.20
2	Nipple for Steam Connection	1.00	1.50	1.80	2.40
3	Stem for Top Bonnet	2.60	3.40	4.00	4.50
4	Coupling for Steam Connection	1.30	1.80	2.25	3.25
5	Packing Nut for Top Bonnet	.70	.80	1.00	1.25
6	Jet Wrench	.55	.70	2.00	8.50
7	Union	1.80	3.00	4.50	7.00
8	Top Bonnet	2.00	2.50	3.25	4.25
9	Lifter Steam Jet	1.50	3.00	3.50	7.00
10	Forcer Steam Jet	1.35	1.75	2.75	5.50
11	Lifter Tube	1.90	3.00	5.25	7.00
12	Forcer Tube	2.60	3.75	5.50	9.00
13	Body	....	....	....	....
14	Stem for Overflow Bonnet	2.25	3.50	4.00	4.50
14b	Disc for Part 14	....	....	1.75	2.50
15	Handle for Overflow Bonnet	.70	.80	.90	1.00
16	Overflow Bonnet	2.00	2.50	3.00	3.50
17	Packing Nut for Overflow Bonnet	.60	.75	.95	1.10
18	Couplings for Suction and Delivery	1.80	2.25	3.25	4.25
19	Spanner Wrench	.70	.95	1.10	1.25
20	Nut for Top Bonnet Stem	.15	.15	.15	.15
21	Nipples for Suction and Delivery	1.50	1.80	2.40	3.20
22	Mall. Iron Coupling for Suction	.55	....	....	....
23	Mall. Iron Tee for Delivery	.85	1.20	2.00	3.50
24	Swivel for Overflow Valve	.30	.60	90	2.50
26	Stem for Overflow Valve	2.60	3.40	4.00	4.50
27	Handle for Overflow Valve	.70	.80	.90	1.00
29	Body for Overflow Valve	2.50	3.60	5.20	6.75
30	Bonnet for Overflow Valve	2.60	3.40	4 00	4.50
31	Packing Nut for Overflow Valve	.65	.75	.90	1.10
32	Parts 1, 3, 5, and 8	6.25	8.00	10.00	12.00
33	Parts 14, 15, 16, and 17	5.50	7.50	10.50	13.00
34	Parts 24, 26, 27, 29, 30, and 31	9.50	12.50	15.50	20.00
35	Parts 9, 10, 11, and 12	7.10	10.00	15.00	25.00
36	Parts 18, 21, and 22	3.75	4.25	5.50	7.25
37	Parts 18, 21, 23, and 34	13.50	15.50	23.00	31.00

Model N Metropolitan Automatic Injectors

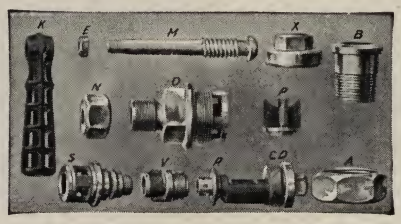


A self-contained, single tube automatic or restarting injector operated entirely by one handle, not requiring valves in steam or suction pipe to be regulated for different steam pressures. Desirable in service where injector is operated frequently. Injector is self-starting after interruption of steam or feed water supply.

Size No.	Each	Size of All Pipe Connections Inches	Size of Overflow Inches	Gallons per Hour 2 Ft. Lift 80 Lbs.	Weight Pounds
*2 and 3	$10.00	3/8	3/4	80	2½
*3½ and 4	12.00	½	3/4	165	3
*5 and 6	16.50	3/4	1	350	5
*7 and 8	27.00	1	1¼	600	8
*9 and 10	37.00	1¼	1½	1000	12
11 and 12	50.00	1½	2	1750	20
13 and 14	75.00	2	2½	2850	32

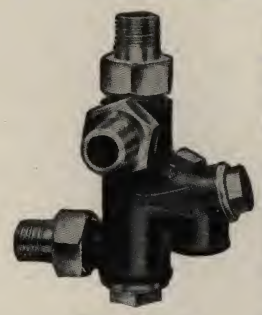
*Furnished with a flat strainer.

Parts for Model N Metropolitan Injectors



Part	Description	Size No. of Injector 2 & 3 Each	3½ & 4 Each	5 & 6 Each	7 & 8 Each	9 & 10 Each	11 & 12 Each	13 & 14 Each
S	Steam Nozzle	$2.00	$2.25	$2.60	$3.20	$3.80	$5.60	$8.80
V	Lifting Tube	.50	.60	.70	1.00	1.50	2.50	3.50
C-D-R	Combining and Delivery Tube and Auxiliary Check	1.50	1.75	2.25	2.75	3.50	5.00	7.00
P	Overflow Valve	.20	.40	.60	.80	1.00	1.50	2.00
O	Steam Plug	.80	1.00	1.25	1.75	2.75	4.00	5.50
M	Steam Valve and Stem	.35	.45	.60	.90	1.40	2.00	3.25
N	Packing Nut	.25	.30	.40	.50	.65	.80	1.00
K	Steam Valve Handles	.50	.60	.70	.80	1.00	1.20	1.50
A	Coupling Nut	.50	.65	.95	1.30	1.90	2.50	4.00
B	Tail Pipe	.35	.45	.65	1.00	1.40	1.90	2.70
X	Overflow Cap	.40	.60	.80	1.00	1.40	1.80	2.40
E	Nut for Stem M	.10	.10	.10	.15	.15	.15	.20
..	Tube Wrenches	1.60	1.60	2.25	2.60	3.20	5.60	8.00

Penberthy Automatic Injectors



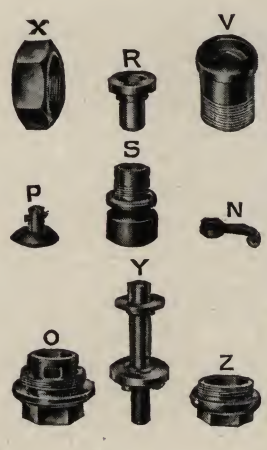
Stock Model

A high grade automatic machine; if the current of water is broken by any cause, the injector will pick up the water and re-establish the current to the boiler without the least attention.

Every machine is carefully tested, and will work on the following points: Start low, 20 to 22 pounds steam on 3-foot lift. Work high, 165 to 170 pounds steam on 3-foot lift. Lift water, 20 to 24 feet on 60 to 80 pounds steam. Will deliver water to boiler at 160° to 212°, according to temperature of feed water and steam pressure. Water 200° to 212° can nearly always be delivered at nearly all pressures over 50 pounds by throttling suction valve and delivering minimum capacity. It is advisable in many cases to install an injector large enough so that the supply can be cut down and attain this result, thereby saving fuel. By placing a short piece of pipe having a stopcock, in the overflow, and closing after the injector has started, water 8° to 10° hotter can be handled, but the injector is rendered non-automatic while the stopcock is closed.

Size	Each	Hp. Based on Ordinary Tubular Boiler	Hp. Based on 30 Lb. Water per Hp. per Hour	Pipe Connections Inches	Gallons per Hour 1 to 3-Ft. Lift 60 to 110 Lb. Steam Pressure Max.	Min.
O	$15.00	3 to 6	4 to 8	¼	60	35
OO	16.00	4 to 8	6 to 12	3/8	80	45
A	18.00	8 to 16	10 to 20	½	135	70
AA	20.00	12 to 22	15 to 30	½	180	100
B	25.00	17 to 32	22 to 45	3/4	260	140
BB	30.00	20 to 45	25 to 60	3/4	360	180
C	40.00	40 to 65	45 to 80	1	475	250
CC	45.00	45 to 80	50 to 100	1	600	325
D	55.00	50 to 100	60 to 135	1¼	800	425
DD	60.00	75 to 135	85 to 165	1¼	1000	525
E	75.00	100 to 180	125 to 235	1½	1400	740
EE	90.00	115 to 255	150 to 320	1½	1900	850
F	110.00	160 to 320	200 to 400	2	2400	1275
FF	125.00	200 to 400	250 to 500	2	3000	1600
GG	200.00	375 to 600	400 to 750	2½	4200	2150

Parts



In ordering parts do not fail to give serial letter and number, which will be found on top of overflow. In referring to or ordering parts, designate them by letter or name.

Size of Injector	O OO	A AA	B BB
R—Steam Jet...ea.	$.25	$.35	$.45
S—Suction Jet .ea.	.25	.35	.45
Y—Delivery Jet.ea.	1.25	1.50	2.00
X—Coupling Nut ea.	.25	.30	.40
V—Tail Pipe...ea.	.25	.30	.40
Z—Overflow Cap ea.	.30	.40	.50
P—Overflow Valve .....ea.	.40	.50	.60
N—Overflow Hinge.....ea.	.10	.10	.15
O—Plug.....ea.	.60	.80	1.00
Strainer.....ea.	.40	.45	.50

Size of Injector	C CC	D DD	E	EE	F	FF	GG
R—Steam Jet.....ea.	$.55	$.65	$.75	$.75	$.85	$1.00	$2.00
S—Suction Jet. ...ea.	.55	.65	.75	.75	.85	1.00	3.00
Y—Delivery Jet...ea.	2.50	3.00	3.75	4.50	5.50	6.50	9.00
X—Coupling Nut..ea.	.50	.60	1.25	1.25	1.50	1.50	2.00
V—Tail Pipe.....ea.	.50	.60	.80	.80	1.00	1.00	1.25
Z—Overflow Cap..ea.	.60	.70	.80	.80	.90	.90	1.50
P—Overflow Valve.ea.	.75	.90	1.00	1.10	1.25	1.25	1.75
N—Overflow Hinge.ea.	.15	.15	.20	.20	.20	.20	.30
O—Plug.....ea.	1.25	1.50	1.75	1.75	2.00	2.00	4.00
Strainer.....ea.	.55	.60	.75	.75	1.00	1.00	1.50

Penberthy XL-96 Improved Ejectors

Siphon or Steam Jet Pumps

Lifts 22 to 25 Feet
Elevates 25 to 100 Feet
Pressure 30 to 100 Pounds

The lifting and elevating power is so combined in the XL-96 Ejector as to make it unsurpassed by any device of its kind. The principle and power contained in so small, handy and economical an instrument, continually suggests new uses, which often demand that the tubes of the ejector be proportioned particularly for the service. The manufacturer is prepared to furnish special ejectors singularly efficient in the work for which they are designed.

No.	Brass Each	Iron Body Brass Jets Each	Steam Connection In.	Suction and Discharge In.
1	$8.00	.....	3/8	1/2
2	10.00	.....	1/2	3/4
3	15.00	.....	3/4	1
4	20.00	.....	1	1 1/4
5	25.00	$20.00	1	1 1/2
6	35.00	27.50	1 1/4	2
*7	50.00	40.00	1 1/2	2 1/2
*8	70.00	50.00	2	3
*9	105.00	70.00	2	3 1/2
*10	145.00	95.00	2 1/2	4

	Capacity, Gallons per Hour				Vertical Lift Feet	
No.	3-Ft. Lift 40-65 Lbs. Steam Press.	3-Ft. Lift 20-40 or 65-100 Lbs. Steam Press.	50-Ft. Eleva. 40-65 Lbs. Steam Press.	25-Ft. Eleva. 40-65 Lbs. Steam Press.	40-75 Lbs. Steam Press.	25-40 or 75-100 Lbs. Steam Press.
1	240	235	120	180	23	20
2	500	450	250	375	25	22
3	840	700	420	625	25	22
4	1350	1300	650	950	25	22
5	1950	1850	975	1450	25	22
6	3500	3000	1750	2600	25	22
*7	5700	4350	2500	3750	25	22
*8	9500	8160	4750	7200	25	22
*9	13600	12400	6800	10200	25	22
*10	18400	17100	9200	13800	25	22

Sizes 5 and 6 will be sent in all brass, unless ordered with iron body and brass jets and steam connection.

*Unless ordered in brass, sizes 7 to 10 inclusive, will be shipped with iron body, brass jets and steam connection.

Table Showing Size of Boilers Required for Ejectors

No. of Ejector.....	1, 2, 3	4, 5, 6	7, 8	9, 10
Size of Boiler.....h.p.	2 to 6	8 to 12	15 to 20	25 to 30

Parts

Size No.	R- Steam Jet Each	Y- Del. Jet Each	V- Tail Pipe Brass Each	X- Coupling Nut Brass Each	Strainer Each
1	$.25	$.80	$.25	$.25	$.45
2	.35	1.00	.30	.30	.50
3	.45	1.25	.40	.40	.55
4	.55	1.50	.50	.50	.60
5	.60	1.75	.50	.50	.75
6	.80	2.50	.60	.60	1.00
7	1.00	4.00	.80	1.25	1.50
8	1.25	6.00	1.00	1.50	....
9	1.50	8.00	1.00	1.50	....
10	2.00	10.00	1.25	2.00	....

Special Acid Resisting Ejectors

Furnished when specified at a slight additional cost.

Model C Hancock H-D Ejectors

Size No.	Each	Body Material	Pipe Connections Inches Steam	Pipe Connections Inches Suction and Delivery	Gallons per Hour 60 Lbs. Steam Pressure
1	$4.50	Bronze	3/8	1/2	350
2	5.50	Bronze	1/2	3/4	575
3	8.00	Bronze	3/4	1	975
4	11.00	Bronze	1	1 1/4	1400
5	13.50	Bronze	1 1/4	1 1/2	2950
* 6	19.00	Iron	1 1/4	2	4250
* 7	24.00	Iron	1 1/2	2 1/2	6200
* 8	40.00	Iron	2	3	13500
* 9	62.50	Iron	2 1/2	4	24000
*10	145.00	Iron	4	6	38000

*Ejectors with iron bodies are made with bronze parts.

Blakeslee Jet Pumps

For raising water and other liquids.

Adapted for tanneries, breweries, creameries, railroad water stations, etc. Tubes removable and interchangeable.

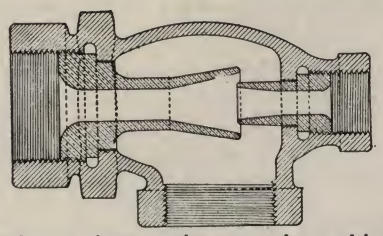
Size Pump In.	Each	Suction Pipe, In.	Discharge Pipe, In.	Steam Pipe In.	Cap. GPM.	Wt. Lb.
*3/4	$8.00	3/4	1/2	3/8	8	4
*1	10.00	1	3/4	1/2	15	6
*1 1/4	12.00	1 1/4	1	1/2	20	8
†1 1/2	14.00	1 1/2	1 1/4	3/4	30	12
†2	16.00	2	1 1/2	3/4	40	16
†2 1/2	20.00	2 1/2	2	1	50	24
†3	24.00	3	2 1/2	1	60	33
†4	70.00	4	3	2	250	60

*Iron bodies, iron nipples, and brass nuts, combining and steam tubes.

†Iron bodies, nuts and nipples, and steam and combining tubes of brass.

Also made in other metals, special order.

Watson & McDaniel Syphon Pumps



Used where it is desired to elevate liquids. With 60 pounds of steam, this pump will force liquids 60 feet high with ease.

Symmetrical in design and small in size; can be used in places where saving space is an object.

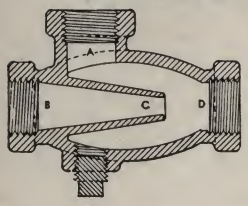
With the exception of No. 12, this pump can be furnished to operate with water pressure, if so stated when ordering. State pressure of water, and height the water is to be lifted.

Nos. 12 to 16, inclusive are made of bronze; Nos. 17, 18 and 19 are made with an iron body, fitted with bronze nozzles.

No.	Each	Pipe Diameter, Inches Suction	Pipe Diameter, Inches Discharge	Pipe Diameter, Inches Stem	*Cap. Gal. per Hr.	*Cubic Feet per Hr.	Ship. Wt. Lb.
12	$6.00	1/2	1/2	1/4	150	20	2
13	7.00	3/4	3/4	3/8	400	52	2
14	8.00	1	1	1/2	700	90	3
15	11.00	1 1/4	1 1/4	3/4	1100	140	4
16	14.00	1 1/2	1 1/2	3/4	1600	210	6
17	17.00	2	2	1	3000	400	9
18	28.00	2 1/2	2 1/2	1 1/4	5000	660	15
19	35.00	3	3	1 1/2	7000	930	21

*Steam at 50 pounds, syphon near water level.

McDaniel Cast Iron Suction Tees



A fitting for improving circulation in steam heating lines, acting as an injector to accelerate weak returns. Can be used for heating water noiselessly. Also used for sterilizer installations.

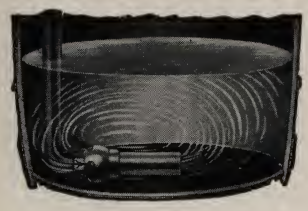
Cannot be used to lift liquids.
A and B = Inlets.
C = Jet orifice.
D = Outlet.

Standard Tees—100 Pounds Pressure

Size.....in.	½	¾	1	1¼	1½	2	2½	3
Each.....	$1.50	1.50	2.00	2.25	2.75	3.50	5.50	8.00
Ship. Wt.....lb.	2	4	5	6	7	10	15	24

Extra Heavy Tees—250 Pounds Pressure

Size.in.	1	1¼	1½	2	2½	3	4	5	6
Each..	$3.50	4.50	5.50	7.50	11.00	16.00	27.00	43.00	60.00
Ship. Wt.lb.	10	12	14	20	26	38	70	100	160



Penberthy Noiseless Water Heaters

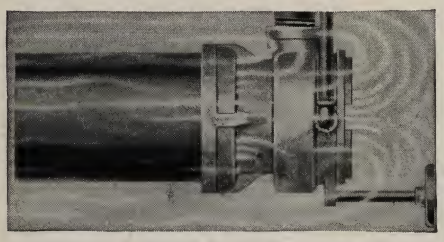
The use of this heater does away with all noise such as otherwise occurs when heating a tank or barrel of water or other liquid with steam. It is of special value to creameries, chemical works, breweries, etc.

Size No.	Steam Pipe In.	Disch. Pipe In.	*Cap. Gals.	Each	Size No.	Steam Pipe In.	Disch. Pipe In.	*Cap. Gals.	Each
F	¼	⅜	50	$1.50	K	1	1¼	125	$3.00
G	⅜	½	60	1.75	L	1¼	1½	175	4.00
H	½	1	75	2.00	M	1½	2	250	5.00
J	¾	1	100	2.50	N	2	2½	500	8.00

*Gallons of water heated from 70° to 210° in 30 minutes with 70 pounds steam pressure.

Penberthy XL-32 Water Heaters

Steam-Operated, High Temperature, Open Tank Type



Will heat water or other liquids to any temperature up to boiling, quietly and without surging or pounding.

Operating steam pressures range from 3 to 140 pounds at heater nozzle. Heating is accomplished by mixing steam with the liquid to be heated.

Size Heater..in.	½	¾	1	1¼	1½	2
Each.....	$10.00	15.00	20.00	35.00	50.00	70.00

No. 886 Brass Strainers

I.P.S. Inches	Each	I.P.S. Inches	Each
⅜	$.30	1½	$1.20
½	.40	2	2.00
¾	.50	2½	3.50
1	.60	3	4.00
1¼	.75	...	....

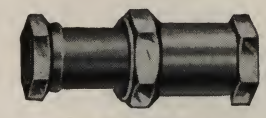
No. 251 Flat Strainers

With No. 20 Mesh Brass Wire		With No. 12 Mesh Brass Wire	
Size Inches	Each	Size Inches	Each
⅜	$.20	1¼	$.50
½	.30	1½	.75
¾	.40	2	1.00

Standard Brass Expansion Joints

125 Pounds Steam Working Pressure
200 Pounds Cold Water, Oil, or Gas Working Pressure

Screwed, Standard Traverse



No. 742

Size In.	Each	Traverse In.	Size In.	Each	Traverse In.
½	$1.50	2	1½	$5.00	2¼
¾	2.20	2¼	2	8.00	2½
1	3.00	2¼	2½	14.00	2½
1¼	4.00	2¼	3	21.00	2¾

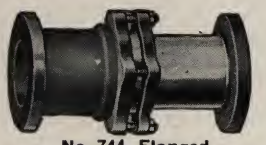
Screwed, Special Traverse

Size Inches	Each — Traverse, Inches 4	6	8	12
½	$3.30	.....	.....	.....
¾	4.00	$5.00	$6.00	$8.00
1	4.90	6.00	7.25	9.50
1¼	6.15	7.50	9.00	12.00
1½	7.40	9.00	10.75	14.50
2	11.00	13.00	15.25	19.50
2½	17.50	20.50	23.00	28.00
3	25.00	29.00	32.00	37.50

Standard Iron Body Expansion Joints

Brass Sleeves
125 Pounds Steam Working Pressure
200 Pounds Cold Water, Oil, or Gas Working Pressure

No. 743, Screwed



No. 744, Flanged

Screwed, Standard Traverse

Size Inches	Each	Traverse Inches	Size Inches	Each	Traverse Inches
1½	$6.25	2½	4	$18.00	3¼
2	7.00	2½	5	38.00	4
2½	8.00	2½	6	42.50	4
3	10.00	2¾	8	90.00	4
3½	14.00	3	..	.....	...

Screwed, Special Traverse

Size Inches	Each — Traverse, Inches 4	6	8	12
1½	$7.25	$9.50	$11.75	$16.25
2	8.50	11.00	13.50	18.50
2½	10.00	13.00	16.00	22.00
3	13.50	17.50	21.50	29.50
3½	20.00	25.00	30.00	40.00
4	24.00	30.00	36.00	48.00
5	.....	45.00	52.00	66.00
6	.....	51.50	60.50	78.50
8	.....	.....	110.00	130.00

Flanged, Standard Traverse

Size Inches	Each	Traverse Inches	Diam. Flanges Inches	Size Inches	Each	Traverse Inches	Diam. Flanges Inches
1½	$13.75	2½	....	6	$55.00	4	11
2	15.00	2½	6	8	90.00	4	13½
2½	16.00	2½	7	10	135.00	4	16
3	18.50	2¾	7½	12	190.00	4	19
3½	25.00	3	8½	14	263.00	4	21
4	30.00	3¼	9	16	334.00	4	23½
5	48.00	4	10	..	.....	..	....

Flanged, Special Traverse

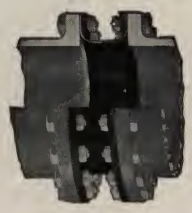
Size Inches	Each — Traverse, Inches 4	6	8	12
1½	$14.00	$16.25	$18.50	$23.00
2	15.50	18.00	20.50	25.50
2½	17.00	20.00	23.00	29.00
3	21.00	25.00	29.00	37.00
3½	30.00	35.00	40.00	50.00
4	34.00	40.00	46.00	58.00
5	.....	55.00	62.00	76.00
6	.....	63.00	71.00	87.00
8	.....	100.00	110.00	130.00
10	.....	.....	157.00	179.00
12	.....	.....	214.00	238.00
14	.....	.....	291.00	319.00
16	.....	.....	368.00	402.00

Low Pressure Copper Expansion Joints

Horizontal or Vertical

For 25 Pounds Steam Working Pressure

No. 747, with Cast Iron Swivel Flanges



No. 748, with Cast Steel Split Rings

These copper expansion joints are recommended for use only where the expansion does not exceed ¼ inch.

The flanges or rings are adjustable, thus making easy the alignment of bolt holes.

No. 748 is especially recommended on high vacuum systems, as its construction provides against danger of collapsing, due to external or atmospheric pressure. No. 748 comprises the copper shell and split rings only.

Both styles furnished faced and drilled.

Size Inches	Nos. 747 or 748 Each	Face to Face Inches No. 747	Face to Face Inches No. 748	Diameter Flanges and Rings Inches	Thickness of No. 748 Steel Ring Inches
4	$110.00	8	5½	9	⅜
5	125.00	9	5½	10	⅜
6	140.00	9	6	11	7/16
8	170.00	10	6	13½	7/16
10	200.00	11	6	16	½
12	225.00	11	6	19	½

No. D-2 Adsco Double Slip Semi-Guided Expansion Joints

Traverse, 4, 8 and 12 Inches per Slip

For 125 Pound Steam Working Pressure

With base, no service.

Double slip allows for pipe expansion on both ends of base point.

Body of cast iron or steel as required for the service on which joint is to be used; 450°F. recommended as maximum temperature for cast iron and 750°F. for steel joints.

In ordering indicate amount of traverse desired. State if joint is to be tapped for drip. Prices do not include packing. Also available in single slip joints. Prices on steel joints upon application.

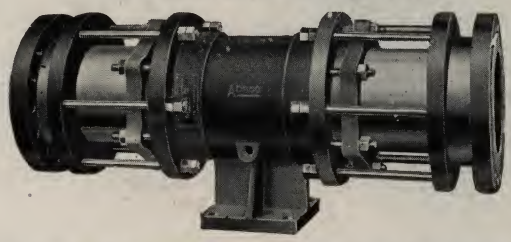
Size In.	4-In. Traverse Per Slip Each	4-In. Traverse Per Slip Wt., Lb.	Add for Each Add. 4 In. of Traverse Both Slips Each	Add for Each Add. 4 In. of Traverse Both Slips Wt., Lb.	*Face to Face In.	Diam. Flanges In.
2	$42.50	46	$7.20	16	31 11/16	6
2½	50.00	55	8.00	20	32 9/16	7
3	60.50	84	9.00	24	32⅞	7½
3½	69.00	106	10.80	32	33	8½
4	78.00	127	12.60	40	35 3/16	9
5	97.00	160	14.40	48	35¾	10
6	125.00	198	16.20	56	36⅜	11
8	175.00	333	20.00	76	38¼	13½
10	230.00	494	25.00	104	39¾	16
12	320.00	635	32.50	144	41¼	19
14	425.00	868	43.00	200	41¾	21
16	538.00	1112	54.00	260	42¾	23½
18	663.00	1532	65.00	320	45¾	25
20	804.00	1747	80.00	380	47¼	27½

*Dimensions are for 4-inch traverse each slip. For each additional 4 inches of traverse on both slips, add 16 inches.

No. D-2-T Adsco Double Slip Semi-Guided Expansion Joints with Tie Rods

Traverse, 4, 8 and 12 Inches per Slip

For 125 Pounds Steam Working Pressure



With base, no service. Double slip allows for pipe expansion on both sides of base point. Maximum temperature: cast iron body, 450°F.; steel body, 750°F.

In ordering, indicate amount of traverse desired. State if joint is to be tapped for drip. Prices do not include packing. Steel joints, prices upon application.

Size In.	4-In. Traverse Per Slip Each	4-In. Traverse Per Slip Wt. Lb.	Add for Each Add. 4 In. of Traverse Both Slips Each	Add for Each Add. 4 In. of Traverse Both Slips Wt. Lb.	*Face to Face In.	Diam. Flanges Inches
2	$62.00	60	$7.20	18	33 11/16	6
2½	70.00	70	8.00	22	34 11/16	7
3	84.00	110	9.00	26	35⅝	7½
3½	98.00	138	10.80	35	35¾	8½
4	112.00	165	12.60	42	38 13/16	9
5	136.00	207	14.40	52	39⅛	10
6	168.00	259	16.20	64	40	11
8	225.00	438	20.00	80	41¾	13½
10	310.00	654	25.00	110	44⅛	16
12	416.00	838	32.50	150	45½	19
14	530.00	1148	43.00	210	46⅜	21
16	662.00	1472	54.00	270	47⅜	23½
18	806.00	2028	65.00	340	50¾	25
20	974.00	2311	80.00	420	52¾	27½

*Dimensions are for 4-inch traverse each slip. For each additional 4 inches of traverse on both slips, add 16 inches.

No. 614 Lunkenheimer Bronze Swing Joints

Hexagon End Pattern

100 Lb. W.O.G.

Inlet and outlet ends are regularly furnished threaded for same size pipe.

The flow ports are open regardless of the relative position of the inlet and outlet ends.

Size Inches	Part Finished Each	Size Inches	Part Finished Each	Size Inches	Part Finished Each
¼	$3.40	¾	$6.50	1½	$16.00
⅜	4.00	1	9.00	2	28.00
½	4.50	1¼	12.00	...	.....

Use the Telephone and Save Time

We are organized to give special service on telephone orders.

Barco Flexible Ball Joints and Swivel Joints

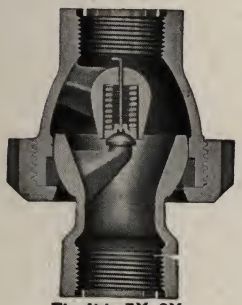
Flexible 7-8
Screw End

Flexible 7A-8

Flexible 7-8

Swivel 7S-8CS
Flexible 7-8C

Swivel 7AS-8CS
Flexible 7A-8C

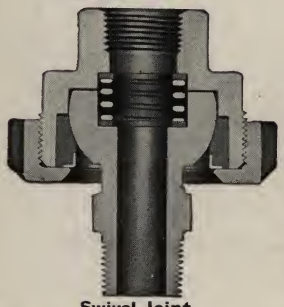

Flexible 7X-8X
Spring Type

Flexible 7AX-8X

Flexible 7BX-8BX

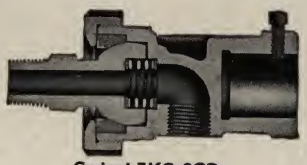
Flexible 7X-8BX

Flexible 7C-8B


Swivel Joint

Swivel 7S-8BS
Flexible 7-8B

Swivel 7AS-8BS
Flexible 7A-8B


Swivel 7KS-8CS

Straight Joint
Flange End

Ball Joints

I.P.S. Inches	Malleable Iron: 7-8 7X-8X 7P-8P Each	7-8C Each	7C-8B 7A-8C 7P-8AP 7CP-8BP Each	7-8B 7X-8BX 7A-8 7AX-8X 7P-8BP 7AP-8P Each	7AP-8BP Each	7A-8B Each	7B-8 Each	7B-8B 7BX-8BX Each	7H-7-8 7-H-8 Each	Bronze: 7-8 Each	7-8C 7C-8 7C-8C Each	7-8B 7A-8 Each	7A-8C 7C-8B Each	7A-8B Each	7B-8 Each	7B-8B Each	Straight Joint Flanged Ends Each
*1/8, 1/4, 3/8	.....	.....	.....	.....	.....	.....	.....	.....	.....	$3.50	.....	$3.90	.....	$4.10	.....	.....	.....
1/2, 3/4, 1/4, 1/8, 2	$4.00	$4.00	$4.30	$4.30	$4.60	$4.60	$4.80	$5.10	.....	5.00	$5.00	5.20	$5.20	5.60	$5.90	$6.30	.....
3/4	4.90	4.90	5.20	5.20	5.60	5.60	5.80	6.30	$6.20	6.30	6.30	6.70	6.70	7.20	7.70	8.10	.....
1	5.50	5.50	5.80	5.80	6.30	6.30	6.50	7.00	6.20	7.50	7.50	7.90	7.90	8.60	8.90	9.60	.....
1 1/4	6.80	6.80	7.10	7.10	7.60	7.60	8.00	8.50	7.50	9.30	9.30	9.70	9.70	10.50	10.90	11.70	.....
1 1/2	7.80	7.80	8.10	8.10	8.60	8.60	8.90	9.50	8.40	11.20	11.20	11.60	11.60	12.40	12.90	13.70	.....
2	9.70	9.70	10.80	10.80	11.20	11.20	12.10	12.60	11.10	14.70	14.70	16.40	16.40	17.00	18.30	19.10	.....
2 1/2	17.00	17.00	18.60	18.60	19.40	19.40	20.60	21.80	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	30.70	30.70	35.70	35.70	40.70	40.70	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	37.30	37.30	.....	43.50	.....	49.60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	$53.50
5	55.40	55.40	.....	59.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	62.20
6	63.40	63.40	.....	68.30	.....	81.60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	71.10
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	146.50
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	197.00
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	260.60

P designates insulating joints for plating tanks, 1/4 to 3 inches. X type joints, 1/2 to 2 1/2 inches.

Swivel Joints

No.	Standard—I.P.S. Inches: ‡Series 300 (Standard) 1/4	3/8, 1/2	3/4	1	1 1/4	1 1/2	2	‡Series 150 1/4	3/8, 1/2	Bronze—I.P.S. Inches: ‡Series 300 (Standard) 1/4	3/8, 1/2	3/4	1	1 1/4	1 1/2	2	‡Series 150 1/4	3/8, 1/2
7S-8CS	....	$4.00	$4.90	$5.50	$6.80	$9.20	$12.10	....	....	....	$5.00	$6.30	$7.50	$9.30	$11.20	$14.70	....	....
7S-8BS	$4.30	4.30	5.20	5.80	7.10	† 9.60	†13.50	$4.00	$4.00	$5.20	5.20	6.70	7.90	9.70	†11.60	†16.40	$4.50	$4.50
7AS-8CS	....	4.30	5.20	5.80	7.10	9.60	13.50	....	....	....	5.20	6.70	7.90	9.70	11.60	16.40	....	....
7AS-8BS	4.60	4.60	5.60	6.30	7.60	†10.20	†14.00	4.20	4.20	5.60	5.60	7.20	8.60	10.50	†12.40	†17.00	4.70	4.70
§7KS-8CS	....	4.60	....	....	....	....	....	....	....	....	5.60	....	....	....	....	....	....	....
§7KS-8BS	4.80	4.80	....	....	....	....	....	....	....	5.90	5.90	....	....	....	....	....	....	....

*Bronze, No. 25. I.P.S.

†Use Nos. 7S-8BCS and 7AS-8BCS when ordering 1 1/2"-2" sizes.

‡Series 300 denotes 300 pounds steam working pressure; Series 150 denotes 150 pounds steam working pressure; Series 300 furnished unless otherwise specified.

§Made for 3/8 and 1/2-inch pipe connections only, but hub can be reamed for any shaft, 3/4 to 1 1/2 inches, inclusive.

For malleable iron ball joints with bronze or alloy steel balls, extra heavy ball or swivel joints and 14, 16, 18, 20, 24, 30, 36, 40 and 48-inch ball joints; prices upon application.

No. D-6AAX Briggs Oil Clarifiers

This fully automatic clarifier is available in suitable sizes for any engine whether stationary, mobile, or marine, operating on gasoline, fuel oil, butane, natural gas or sewage gas.

The clarifier can be installed directly into the lubricating system of any engine having sufficient oil pressure for proper operation of the Briggs unit.

The clarifier contains a built-in relief valve to maintain correct pressure differential on the Briggs Fullers Earth Block Cartridges for proper cleaning of the oil.

Prices on application.

No. G-800 Briggs Oil Clarifiers

For super heavy duty truck, bus, tractor, marine and stationary engines not over 800 cubic inch piston displacement.

It is large enongh to handle man size jobs on man size engines.

Shipped ready for work with necessary bushings for full flow or by-pass applications, heavy duty mounting straps, four threaded inlet and outlet connections, but without tubing or fittings.

Each unit contains a genuine Briggs Fullers Earth Block Cartridge.

Overall height, 24 inches.

Diameter, 6 7/16 inches.

Shipping weight, 38 pounds.

Prices on application.

Plain Steel Grease Cups

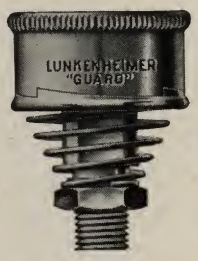
No.	Per 100	I.D. In.	I.P. Thread Inches	Cap Oz.
000	....	3/4	1/8 or 1/4	1/4
00	....	1	1/8 or 1/4	1/2
0	....	1 1/4	1/8 or 1/4	2/3
1	....	1 1/2	1/8 or 1/4 or 3/8	1
2	....	2	1/4 or 3/8 or 1/2	2
3	....	2 1/2	1/4 or 3/8 or 1/2	3 1/2

No. 556 Lunkenheimer Gem Bronze Grease Cups

Plain Base, Cap Screw Feed

Designed for service where an exceptionally well-made bronze grease cup of plain design is demanded; it is recommended for any installation where bearings are not subject to unusual vibration.

Size No.	Bronze Finished Each	Capacity Ounces	Pipe Thread Inches	Height Overall Cup Filled Inches
000	$.60	1/8	1/8	1 3/8
00	.80	1/3	1/8	1 1/2
0	1.00	2/3	1/4	1 13/16
1	1.30	1	1/4	2 1/16
2	1.70	2	3/8	2 5/16
3	2.40	3 1/2	1/2	2 3/4
4	4.00	5	1/2	3



No. 24 Lunkenheimer Guard Bronze Grease Cups

Ratchet Lock-Cap Screw Feed

Finished bronze cups will be furnished unless otherwise specified.

Size No.	000	00	0	1	2
No. 24, Fin. Bronze....each	$1.40	$1.70	$2.15	$2.70	$4.30
No. 24, N.P. Bronze...each	1.80	2.20	2.60	3.50	5.00
Capacity.....ounces	1/8	1/3	2/3	1	2
I.P. Thread.....inches	1/8	1/8	1/4	1/4	3/8
Outside Diameter....inches	15/16	1 3/16	1 1/2	1 11/16	2 1/4
Height.....inches	1 13/16	2 1/8	2 3/8	2 9/16	2 15/16

No. 510 Lunkenheimer Bronze Ideal Grease Cups

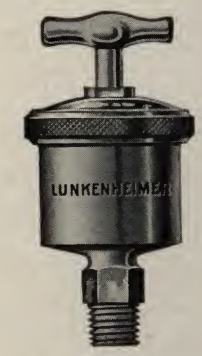
Automatic Feed

Used on engine crank pins, journals, etc. Provided with a leather packed plunger which is easily raised when cup requires recharging with grease. Spring and plunger controlled by a thumb nut, which has automatic lock arrangement.

Size No.	Fin. Bronze Each	N.P. Bronze Each	O.D. In.	*Height Over All In.	Thd. In.	Cap. Oz.
00	$2.10	$2.50	1 3/8	3 1/4	1/8	1/3
0	2.80	3.20	1 3/4	4 3/8	1/4	1
1	3.50	4.00	2	5	1/4	1 1/2
2	4.50	5.00	2 5/8	6 1/8	3/8	3
3	6.00	7.00	3 3/16	7 1/4	1/2	6
4	8.40	9.50	3 5/8	8 3/8	1/2	10

* Cup filled.

No. 512 Lunkenheimer Marine Bronze Plunger Screw Feed Grease Cups



Designed more particularly for marine engines. However, it is also suitable where it is necessary to force grease some distance to the parts to be lubricated. Thread is on plunger, instead of on stem, lessening leakage around plunger.

Size No.	Fin. Bronze Each	N.P. Bronze Each	O.D. In.	Ht. In.	Thread In.	Cap. Oz.
00	$2.90	$3.40	1 3/8	3 3/8	1/8	1/3
0	3.40	4.00	1 3/4	4 3/8	1/4	1
1	4.60	5.40	2	4 7/8	1/4	1 1/2
2	5.70	6.80	2 5/8	6	3/8	3
3	8.00	9.70	3 3/16	7 1/8	1/2	6
4	11.50	13.50	3 5/8	8 3/8	1/2	10
5	20.00	23.00	4 5/16	10	3/4	18

Hunter Airspring Compressed Air Grease Cups

Establishes and maintains a film of grease on bearing. Only as the bearing needs more grease will it be supplied.

Can be mounted in any position or at any angle.

Cold drawn from best quality steel, and made in four sizes.

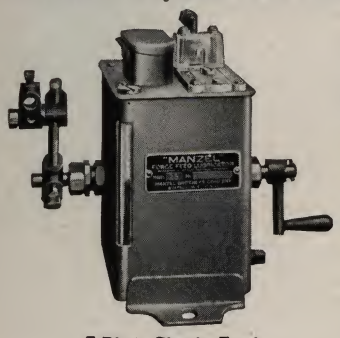
When ordering, be sure to specify capacity, and size shank required.

No.	Each	Cap. Oz.	I.P. Thread, In.	Ship. Wt. Lb. per Doz.
00	$1.00	1/2	1/8–1/4	3 1/8
0	1.25	1	1/8–1/4–3/8	5 3/4
2	1.50	3	1/4–3/8–1/2	10 3/4
3	1.75	6	3/8–1/2–3/4	18

Model 25 Manzel Force Feed Lubricators

With Removable Pumping Units

Designed for general use; for positive and automatic lubrication of cylinders and bearings.



5 Pint, Single Feed
Left-Hand Drive

Used for lubricating practically all classes of machinery. Engines, pumps, and compressors, as well as presses, machine tools, paper and rubber mill machinery, steel mill equipment, etc. can be oiled most effectively and economically with this lubricator.

Can be depended upon to positively force oil of any viscosity against high steam, gas and air pressures generally used on engines, pumps, and compressors. Also delivers oil to bearings of complicated industrial machines.

Lubricator is ruggedly constructed, convenient to operate, and measures out the oil to the cylinder or bearing exactly as needed. Automatically starting, stopping, speeding up or slowing down with the machine on which it is installed, the lubricator supplies just the proper amount of oil necessary.

Individual pumping units are independently removable without stopping lubricator or equipment on which it is installed.

7-Pint, 4-Feed, Left Hand
Showing Pump Unit Removed

Although readily accessible, all working parts are completely enclosed in the reservoir and operate in oil at all times.

Has wide range of feed, from a fractional part of a drop up to 13 drops of oil per stroke. A clear vision sight glass permits operator to see exact amount of oil being supplied.

Tested for pumping against any pressures up to 1000 lb.

Prices shown are for lubricators with painted finish; add 20 per cent for nickel plated finish.

No. of Feeds	Dimensions, Inches: Reservoir Length	Center to Center of Front and Back Lugs	Center to Center of End Lugs	Approx. Cap. Pts.	Model 25D for Steam Cylinder Lubrication Each	Model 25W for Gas Engines & Bearings Each
*1	4½	7¼	5¾	5	$20.00	$19.00
*1	6½	7¼	7¾	7½	24.00	23.00
1	10½	...	11¾	12½	32.00	31.00
*2	5½	7¼	6¾	5½	26.00	24.00
*2	6½	7¼	7¾	7	28.00	26.00
2	10½	...	11¾	12	36.00	34.00
*3	6½	7¼	7¾	6½	34.00	31.00
3	10½	...	11¾	11½	42.00	39.00
4	7½	...	8¾	7	42.00	38.00
4	10½	...	11¾	11	48.00	44.00
5	8½	...	9¾	8	50.00	45.00
5	10½	...	11¾	10½	54.00	49.00
6	9½	...	10¾	8½	58.00	52.00
6	14½	...	15¾	15½	68.00	62.00
7	10½	...	11¾	9½	66.00	59.00
8	11½	...	12¾	10	74.00	66.00
9	13½	...	14¾	12¾	82.50	73.50
10	14½	...	15¾	13½	90.00	80.00

*Usually furnished with single hole lug on center of front and back, but can be supplied with end lugs if desired. Other sizes regularly furnished with 3-hole lugs on ends.

Can be supplied with feeds up to 30.

Detroit Improved Standard Single Connection Lubricators

Lubricator properly lubricates the valves and cylinders of steam engines, steam pumps, gas engines, air compressors, etc. where conditions do not permit the installation of a double connection lubricator. It is not recommended for service where the pressure is in excess of 150 pounds.

Connected to the steam pipe either above or below the throttle or into the steam chest direct.

Finished in polished brass or nickel plated. Composition handles.

Furnished with ⅓-pint, ½-pint, 1-pint and 1-quart capacities. Pipe thread on support arm, ½ inch.

Prices upon application.

Detroit Improved Standard Double Connection Lubricators

For use on all kinds of reciprocating steam engines, steam pumps, etc.

Installed with both connections between the boiler and throttle.

Finished in polished brass or nickel-plated.

Cap. Pints	Pipe Thread on Support Arm Inches	Cap. Pints	Pipe Thread on Support Arm Inches
⅓	½	2	½
½	½	4	¾
1	½	.	..

Prices upon application.

No. 487 Lunkenheimer Major Bronze Lubricators

With Sight Feed, for Small Steam Engine and Pump Cylinders

200 Lb. S.P.

Bull's-eye glasses are provided. The space between the glasses is wide enough to prevent the oil spattering their surfaces under normal service conditions.

Size No.	Cap. Oz.	I. P. Thread In.	Price Each Finished Bronze
1	2¾	⅜	$11.00
3	5	½	16.00
5	10	½	27.00
6	18	¾	32.00

No. 489 Lunkenheimer Banner Bronze Lubricators

With Sight Feed

200 Lb. W.P.

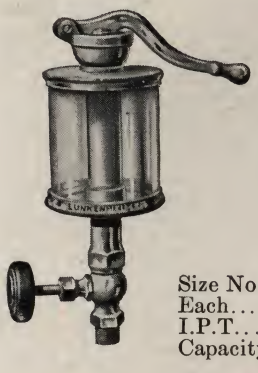
For air compressor cylinders and blowers.

The stop valve controls the main inlet and discharge channel and permits refilling of the oil reservoir under service.

Size No.	Bronze Finished Each	Capacity Ounces	I.P.T. Inches
1	$8.60	2¾	⅜
3	11.00	5	½
5	19.00	10	½
6	22.00	18	¾

No. 495 Lunkenheimer Alpha Oil Pumps

250 Pounds S.P.



The No. 495 Alpha Glass Body Oil Pump is adaptable to practically any installation as an auxiliary to regular engine pump or compressor cylinder lubricator.

Funnel shaped top facilitates filling. Lever design enables easy operation, and plunger construction insures positive discharge.

Bronze finish, bronze base and top.

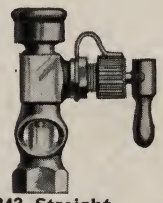
Size No.	3	5	6	8
Each	$15.00	17.00	20.00	30.00
I.P.T. in.	3/8	3/8	1/2	1/2
Capacity pt.	1/8	1/2	1	2

No. 1301 Lunkenheimer Paragon Lubricators

For gas, gasoline or oil engine cylinders
Glass body; cast bronze base and top.
Equipped with sight feed.
Finished bronze lubricator furnished unless otherwise specified.

Size No.	Cap. Oz.	I. P. Thread In.	Height Over All Inches	Fin. Bronze Price Each
1 1/2	1 1/2	1/4	5 1/2	$4.75
2	2 1/2	3/8	6	5.25
3	4	3/8	6 1/4	5.75
4	5	3/8	7	6.50
5	10	1/2	7 3/4	9.00
6	18	1/2	8 3/4	12.00

Lunkenheimer Bronze Sight Feed Valves



No. 343, Straight

No. 339, Angle

Finished bronze.

Size ... inches	1/8	1/4	3/8
No. 343, Straight ... each	$6.00	$6.00	$6.00
No. 339, Angle, with Union ... each	7.50	7.50	7.50

Priming Cups

Straight Shank, Lever Handle

Short Pattern Diam. Cup In.	Short Pattern Size Shank In.	Short Pattern Price Each	Long Pattern Diam. Cup In.	Long Pattern Size Shank In.	Long Pattern Price Each
3/4	1/8	$.80	3/4	1/8	$.85
3/4	1/4	.90	3/4	1/4	1.00
1 1/8	1/4	1.30	7/8	1/8	.95
1 1/8	3/8	1.45	1 1/8	1/4	1.40
1 1/4	1/4	1.55	1 1/4	1/4	1.60
1 1/4	3/8	1.65	1 1/4	3/8	1.70
1 1/2	3/8	1.80	1 1/2	3/8	1.85

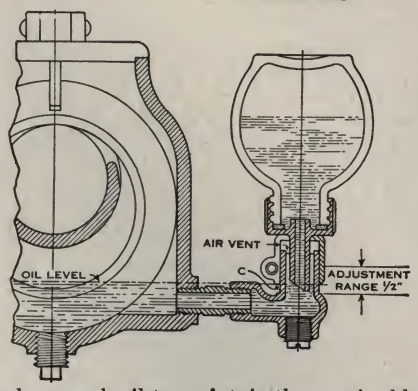
No. 1248 Straight Shank

No. 1276 Elbow Shank

Elbow Shank, Lever Handle

7/8	1/8	$1.00	7/8	1/8	$1.05
7/8	1/4	1.10	7/8	1/4	1.15
1 1/8	1/4	1.45	1 1/8	1/4	1.55

Lunkenheimer Alvor Constant Level Oil Controls



Automatically maintains a constant oil level in ring oiled bearings or antifriction bearings suitable for oil bath lubrication. It insures against failure of oil supply and consequent costly shutdown of equipment. Waste is eliminated as it feeds only enough oil to maintain the required level and as long as any oil shows in the glass bottle none need be added.

The Alvor feeds only when the oil level in the bearing is low enough to break the oil seal at the end of the shank, permitting air to enter bottle. It will not feed as long as the oil covers the hole in the end of the shank.

The tee fitting in which the device is inserted is provided with two 1/4-inch pipe connections at right angles to each other, so that connection can be made either at the side or bottom of the bearing box.

To refill, the bottle with its base may be lifted out of the tee fitting without disturbing any connections.

Size No.	1	3	5
No. 1834, Round ... each	$1.80	$2.00	$2.20
No. 1835, Flat Side ... each	....	2.25	....
Capacity (oil) ... oz.	1	4	8
Diameter Round Glass ... inches	1 5/16	2 9/16	2 5/16
Height, Maximum ... inches	5 11/16	5 9/16	8 1/2

Lunkenheimer Bottle Oilers

No. 1815 Globe Body

Straight Blank Shank—Loose Wire Feed

For use in 1/8-inch pipe tapped or 11/32-inch drilled holes.

For 1/4 or 3/8-inch pipe tapped holes, use metal adapters.

When distance from bottom of knurled base to surface of shaft is greater than 2 7/8 inches, extra long loose wire feed is required.

Capacity, 4 ounces.

No. 1816 Flat Side Body

Size No.	*3	†3B
No. 1815, Globe Body ... each	$.85	$1.00
No. 1816, Flat Side Body ... each	1.10	1.20
Extra Long Wire Only ... each	....	.15

*Regular. †Extra long.

No. 1817 Metal Adapters

Exterior

Bearing oil holes which are too large for shank of oiler may be tapped 1/4 or 3/8-inch pipe to receive metal adapters. Adapters drilled to receive oiler shank.

Furnished only when specified.

Section

Pipe Threaded ... inches	1/4	3/8
No. 1817, for Nos. 3 and 3B Size Oilers ... each	$.12	.20

Extra Body Glasses

No. 1818 for Nos. 3 and 3B globe bottle oilers. No. 1819 for Nos. 3 and 3B flat side oilers.

Size No.	1	3	5
No. 1818 ... each	$.35	$.40	$.45
No. 1819 ... each	....	.60	....

Extra Cork Washers

No. 1062, for Nos. 3 and 3B Size Oilers ... per dozen $.44

No. 591 Lunkenheimer Bronze Champion Oil Cups

Has glass sides and enclosed needle valve feed control.

Used for engine crank pins and other bearings having a rotary travel.

Size No.	Cap. Oz.	I. P. Thread Inches	Price Each Fin. Bronze
1	1¼	¼	$5.00
2	2½	⅜	7.00
3	5	½	9.00

No. 1300 Lunkenheimer Sentinel Oil Cups

With Snap Lever Feed Control and Sight Feed

For use on stationary bearings.
Glass body, cast bronze base and top.

Size No.	Finished Bronze Each	Nickel-plated Bronze Each	Capacity Oil Ounces	Iron Pipe Thread Inches
0	$3.00	$3.65	⅝	⅛
1	3.25	4.00	1	¼
1½	3.50	4.30	1½	¼
2	3.75	4.65	2½	⅜
3	4.25	5.25	4	⅜
4	5.00	6.15	5	⅜
5	6.75	8.15	10	½
6	8.75	10.55	18	½
8	16.00	19.00	34	¾

Lunkenheimer Oil Cup Glasses and Washers

No. 526

For lubricators, oil cups, oiling devices, etc. Glasses cylindrical in shape, clear, strong, and uniform in size. Interchangeable with all styles of cups. Thickness of washer, 3/32 inch.

No. 1062

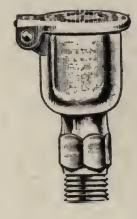
Size No.	No. 526 Glasses O.D. In.	Ht. In.	Each	No. 1062 Washers Size No.	Per Doz.	Size No.	No. 526 Glasses O.D. In.	Ht. In.	Each	No. 1062 Washers Size No.	Per Doz.
000	1	29/32	$.40	161	$.45	3	2¼	2⅛	$1.00	173	$1.30
00	1⅛	1	.50	163	.50	4	2½	2⅜	1.10	176	1.40
0	1¼	1⅛	.60	164	.60	5	3	3	1.30	178	1.70
1	1½	1⅜	.70	166	.80	6	3½	4	1.90	180	2.10
1½	1¾	1⅝	.80	168	1.00	8	4¼	5	4.30	182	3.50
2	2	1⅞	.90	171	1.20	10	5½	7	6.00	185	5.00

No. 954 Lunkenheimer Glass Discs

For Oil Cup Sight Feeds and Indicators

Size No.	Per Dozen	Diameter Inches	Thickness Inches
101	$.75	47/64	5/64
103	1.25	7/8	3/16
104	1.50	1	3/16
105	1.75	1 3/64	1/8
106	2.00	1 3/32	3/8
107	2.50	1 27/64	3/32
108	3.00	1 13/16	3/32
110	$4.00	2 5/64	3/32
111	4.50	2 3/8	1/8
113	5.50	2 15/16	1/8
114	6.00	3 3/8	1/8
115	10.00	3 25/32	5/32
116	15.00	4 13/32	5/32
117	20.00	4 15/16	3/16
118	25.00	6	3/16

Style A Gits Brass Oil Cups



Body and shank are in one piece. Threads are die cut and accurate. Equipped with patented spring hinge lid; easily opened with oil can spout, self closing.

Furnished in mechanical nickel plate or polished nickel plate finish. Nos. 701, 702, and 703 furnished in mechanical nickel plate only.

No.	Per 100	Stock Thread Inches	Body Diam. Inches	Body Height Inches	Cap. Oz.
701	$11.95	5/16–32	13/32	¾	1/64
702	13.15	5/16–32	½	⅞	1/32
703	14.95	⅛ Pipe	½	15/16	1/32
704	17.80	⅛ Pipe	⅝	1⅛	1/16
705	19.25	⅛ Pipe	¾	1¼	⅛
706	24.05	⅛ Pipe	1	1 11/16	¼
707	24.05	⅛ Female Pipe	1	2	¼
708	29.45	¼ Pipe	1¼	1⅝	⅜
711	24.05	¼ Pipe	1	1⅝	¼
712	29.45	⅜ Pipe	1¼	1¾	⅜
713	17.80	5/16–32	⅝	1 1/16	1/16

NOTE—For plain brass finish, deduct 10%.

Style B Gits Threaded Oil Hole Covers

Prevents dirt and grit from reaching and injuring bearings.

One piece body is turned from solid bar stock and provided with a generous oil passage. Threads are die cut—not rolled. Equipped with spring hinge lid, easily opened with oil can spout and self-closing. Standard size wrench holds are provided for quick assembly.

Nos. 118 and 119 have a female pipe thread for connecting a nipple or pipe extension to reach distant bearings.

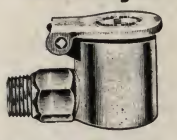
Finished in mechanical nickel plate.

No.	Per 100	Stock Thread	Dimensions, Inches: Assembly Clearance	Body Diam.	Body Ht.	Height Overall	Size Wrench Hold In.
101	$7.90	¼–32	9/16	¼	⅜	9/16	¼
102	7.90	10/32	⅝	5/16	11/32	9/16	5/16
103	7.90	¼–32	⅝	5/16	11/32	9/16	5/16
104	7.90	5/16–32	⅝	5/16	11/32	9/16	5/16
105	8.90	¼–32	11/16	11/32	17/32	¾	⅜
106	8.90	⅜–24	11/16	11/32	15/32	¾	⅜
107	9.00	5/16–32	13/16	13/32	19/32	13/16	7/16
108	9.00	⅛ Pipe	13/16	13/32	19/32	13/16	7/16
109	9.00	7/16–24	13/16	13/32	⅝	⅞	7/16
110	9.00	⅛ Pipe	⅞	15/32	19/32	⅞	½
111	9.00	½–24	⅞	15/32	19/32	⅞	½
112	12.75	⅛ Pipe	1⅛	19/32	13/16	1⅛	⅝
113	12.75	¼ Pipe	1⅛	19/32	13/16	1⅛	⅝
114	16.90	⅜ Pipe	1⅛	19/32	29/32	1¼	11/16
115	15.65	⅜–24	11/16	11/32	17/32	1½	⅜
116	12.80	⅜–24	11/16	11/32	25/32	1 1/16	⅜
117	10.65	5/16–32	⅝	5/16	17/32	¾	5/16
118	13.10	⅛ F. Pipe	1⅛	19/32	¾	1⅛	⅝
119	13.10	¼ F. Pipe	1⅛	19/32	¾	1⅛	⅝
120	10.00	¼–32	9/16	¼	⅝	13/16	¼
121	20.65	½ Pipe	1 5/16	¾	⅞	1 7/16	⅞
122	30.00	¾ Pipe	2	1 7/32	27/32	1 5/16	1¼

Good Will and Customers

Sincerely we hope to make each transaction with you a further bond of good will between us.

Gits Style Y Steel Brazed Elbow Oil Cups



Used as a filler plug or over-flow gage on electric motors and oil reservoirs.

Body is cold rolled strip steel. Stem is made of steel hexagon rod, riveted and brazed in body. Music wire spring. Staple which forms part of the hinge straddles body and is brazed to it on both inside and outside. Polished nickel plate finish.

No.	Per 100	Capacity Ounces	I.P. Thread Inches	Height Overall Inches	Diameter Body Inches
801	$13.10	3/32	1/8	15/16	5/8
802	14.70	1/8	1/8	1	3/4
803	18.55	3/8	1/8	1 7/16	1
804	18.55	3/8	1/4	1 7/16	1
805	18.55	3/8	*1/4	1 1/2	1
806	25.30	3/4	1/4	1 9/16	1 1/4
807	30.95	1 5/8	3/8	2 1/16	1 5/8
808	55.00	3 1/2	1/2	2 1/16	2 1/4

*Female I.P.T.

Noera Roll Thread Oilers

Copper Plated Inside and Out

One-piece seamless steel dome, spring steel bottom, and rolled threads. The dome is double seamed to the bottom, insuring an oil-tight connection. Opening for filling is 1½-inch outside diameter.

No.	Per Dozen	Extra Spouts per Dozen	Capacity Pints	Diameter Inches	Length Spout Inches	Approx. Weight Pounds per Doz.
12	$4.50	$2.75	1/4	2 7/8	3	1 7/8
13	5.50	2.75	1/3	3 1/2	3	2 1/4
13A	6.00	3.25	1/3	3 1/2	5	2 3/8
14	6.50	4.25	1/3	3 1/2	9	2 3/4
14A	7.50	2.75	1/2	3 3/4	3	2 3/4
14AA	8.00	3.25	1/2	3 3/4	5	2 7/8
14B	8.50	4.25	1/2	3 3/4	9	3 1/4
15	9.25	2.75	1	4 1/4	3	4
15A	9.75	3.25	1	4 1/4	5	4 1/8
16	10.50	4.25	1	4 1/4	9	4 1/4

Noera Railroad Oilers

No. 10

A copper plated steel oiler. Dome is double seamed to bottom. Spout connections made with union; spout can be pointed in any direction.

No. 10 Series—One piece dome, bottom double seamed to dome. Interchangeable spout.

No.	Per Doz.	Cap. Pt.	Ht. Spout In.	Approx. Wt. Lb. per Doz.
10	$14.00	1	12	9
10½	16.00	1½	12	9 1/4
11	18.00	2	18	12 1/4

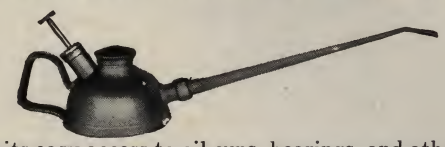
No. 100 Series—One piece dome. Spout is made with a larger opening to allow an increased flow of oil.

100	$14.00	1	12 1/8	10
101	18.00	2	12 1/8	12
*111	20.00	4	12 1/8	16 1/2

*Has two piece dome.

No. 100

Noera Automobile Pump Oilers



Permits easy access to oil cups, bearings, and other places that are usually awkward to reach; particularly useful for oiling springs on all makes of cars.

The pump places under the operator's control the amount of oil operator wishes to use. A large 1¼-inch opening allows the oiler to be filled easily. Copper-plated inside and out.

Packed 6 in a carton.

No.	800	801	802	802½	803	804
Per Dozen	$16.80	17.25	17.75	18.20	18.50	19.20
Length Spout..inches	3	5	9	3	5	9
Capacity.....pints	½	½	½	1	1	1

Noera Nu-Way Pump Oilers

Copper-plated inside and out. Made with interchangeable rigid spouts.

Mechanism works very easily because the bearing parts are made of rustproof brass.

Dome is of steel and bottom is double-seamed to the dome.

Packed 6 of one size in a box.

No.	505V	509V	1009V	3009V
Each	$1.05	1.20	1.65	2.25
Lgth. Spout..in.	5	9	9	9
Ht. Overall .....in.	10	14	14½	15
Capacity...	12-Oz.	12-Oz.	1-Pt.	1-Qt.
Approx. Wt. per 6, lbs.	3¾	4	5¼	5¾

Noera Year 'Round Copperized Steel Pump Oilers

This oiler operates under most conditions and at any angle even when held upside down and is so constructed that oil can be pumped a drop at a time or at the same stroke shoot oil 20 to 25 feet. It operates in hot summer weather or below zero.

By unscrewing the spout and lifting up the top valve, the valve mechanism can be easily and quickly cleaned.

Made with a large filler opening located on the side of the oiler dome making it more accessible for both removing the cap and refilling with oil.

The steel spouts on Nos. 1000, 2000 and 3000 are made of very heavy gage steel, well soldered, and with an extra heavy brass union nut making the pump oiler extra strong at these joints.

No. 500 is furnished with a non-leakable heavy gage brass spout made from solid seamless brass tubing.
Also available with flexible spouts.

No.	500	1000	2000	3000
Each	$1.60	2.00	2.30	2.50
Extra Spouts....per dozen	....	....	....	....
Capacity.....ounces	12	16	24	32
Length Spout.....inches	5	*10	*12	*15
Height Dome.....inches	4 1/8	4 7/8	5 1/4	5 1/2
Height Overall.....inches	9 1/4	13 7/8	17 3/8	20 3/8
Diameter Dome....inches	3	3 3/8	3 5/8	4 1/4
Diameter Opening..inches	1 1/4	1 1/2	1 1/2	1 1/2
Approx. Wt. per Doz...lb.	10	14	15	16

*Spouts interchangeable.

Noera Trigger Oilers

No. 10487

Fits the hand and makes it possible to direct a stream or drop of oil just where it is wanted. Made with a brass top and a steel dome and is copper plated. No parts to rust away or leather washers to replace. The screen is readily removable for cleaning.

Nos. 10457 and 10465 have no extra reservoir at bottom.

Packed 12 in a carton.

No.	*10457	**10465	10487
Each	$1.00	1.10	1.50
Capacity	4 Oz.	¼ Pt.	9 Oz.
Height of Oiler.inches	5¾	5¾	7⅜
Length of Spout.....inches	6	6	6
Diameter of Base.....inches	1 15/16	1 15/16	3½
Weight per Dozen.....pounds	6½	6½	8

*Red, green or blue lacquer finish. **Copper finish.

American Barrel Cradles

Style CW

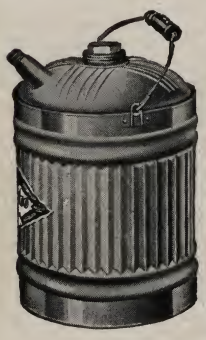
A pressed steel cradle designed for storing and draining of drums and barrels.

Constructed so that one man can load a drum on the 18-inch size.

	With Wheels		Without Wheels	
No	CW-4	CW-6	C-3	C-5
Each	$15.00	19.00	10.00	14.00
For Drum Capacity.....gals.	55	55	55	55
Height to Spigot.....inches	18	24	18	24

Nesco Galvanized Gasoline Cans

Strong, cross corrugated galvanized breasts, double seamed to body. Leak proof, double seamed bottom construction.



Horizontal swedging and deep vertical corrugations in body.

Ears securely riveted to side. Hexagon screw cap. Wire bails with hand-fitting wood grips.

Painted red and embossed gasoline under spout.

No.	501	502	505
Per Dozen	.....	.....	.....
Act. Cap.gallons	1	2	5
Diameter .inches	6¼	8⅛	11
Height....inches	9¾	11¼	14⅝
Filler Opening.in.	1	½	¼
No. in Ctn..doz.	17	14	14
Weight, Ctn..lb.	1½	1½	2 3/16

Justrite Oily Waste Cans

Approved and labeled by Underwriters', and Associated Factory Mutual Fire Insurance Companies.

Body of 24-gage sheet steel, cover of No. 22 gage. The 4-inch legs, handles are of ⅛-inch band iron.

With Foot Lever

With Foot Lever

No.	Each	Size In. Excl. of Legs	Nom. Cap. Gal.	Ship. Wt. Lb.
1	$4.80	11¾x13	6	14
2	5.40	12½x14	8	15
3	6.00	13½x15	10	17
5	7.20	15½x17	14	21

Without Foot Lever

1-A	$4.20	11¾x13	6	12
2-A	4.80	12½x14	8	13
3-A	5.40	13½x15	10	15
5-A	6.60	15½x17	14	19

Lawco Galvanized Ash Cans

Extra Heavy

These cans have extra heavy solid beaded band steel reinforcements on the inside of the body, resisting battering from outside. Bands are welded and riveted, and rest on shoulders of corrugations.

Bodies are double seamed to bottom, making a leak proof joint.

Made of 23-gauge black steel before hand dipping in molten zinc. Covers hold their shape because they have curled edges and are strongly reinforced.

Stop side handles eliminate skinning knuckles.

Ash cans can be furnished with roller attachment when specified.

No.	Each With Cover	Each No Cover	Diameter Inches	Height Inches	Capacity Gallons	Weight Pounds Each
1	$5.45	$4.80	15	26	19	28
2	6.00	5.20	18	26	27	31
3	7.45	6.45	21½	26	37	38

The above three sizes are nestable.

Medium Weight

Made of black steel. Galvanized by the hand dipped process. All seams are double locked, making them leak proof. Cans are strongly reinforced by heavy wire and deep corrugations. Covers are deeply corrugated and have curled edges.

No.	Per Dozen With Cover	Per Dozen No Cover	Diameter Inches	Height Inches	Capacity Gallons	Weight Pounds per Doz.
40	$30.00	$24.40	14½	21¾	15	140
50	36.70	30.40	16½	22½	20	150
60	47.00	39.80	18¼	25	25	173
70	59.00	50.10	21½	25	32	231

Galvanized Fire Pails

A strong durable pail made of steel and galvanized.

Supplied with round bottom, stenciled or plain, or painted red and stenciled.

No	12	14
Plain Galv.....per doz.	...	....
Plain Galv. and Stenciled.....per doz.	...	....
Painted Red and Stenciled.....per doz.	...	....
Trade Cap .....qts.	12	14
Cap.....qts.	13	15
Size.....in.	11x10	11½x10½
Doz. in Bundle.....	1	1

No. 140 Savory Cement or Contractors' Pails

Hot Galvanized—Extra Heavy—Reinforced Capacity 14 Quarts

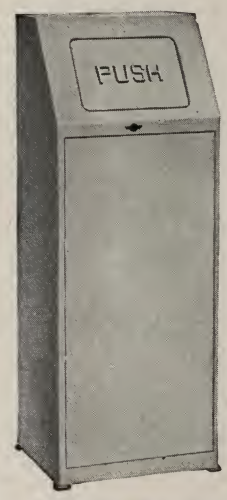
Large rim top reinforced with heavy wire. Bails of ⅜-inch iron rod, galvanized. Flat bottom, extra deep chime strengthened by 2 broad bands riveted at right angles. Combination band-and-ear securely riveted at top.

Size, 11¾x10⅝ inches.
Packed, 6 in a bundle.
Weight of 6, 48 pounds.

No. **140**..per dozen **$30.00**

Lawson Utica Utility Boxes

For office, factory and institutions. Has tight closing, self-operating door—avoids unsightly opening.



All contents are hidden from view—prevents escape of odors.

May be equipped with galvanized can or burlap bag as desired. Easy to remove inner container; merely remove front panel which is held secure by simple flange.

Brass feet.

With Burlap Bags

No.	Olive Green Each	Gray Brown White Each	Base In.	Ht. In.	Wt. Lb
1132	$12.10	$12.65	11½x14½	32¼	27
1140	13.05	13.75	11½x14½	40¼	30
1434	13.90	14.65	14½x17½	34¼	36
1445	15.60	16.25	14½x17½	45¼	47

With Galvanized Cans

1132	$14.95	$15.75	11½x14½	32¼	32
1140	16.35	17.05	11½x14½	40¼	38
1434	17.20	17.95	14½x17½	34¼	45
1445	19.60	20.30	14½x17½	45¼	64

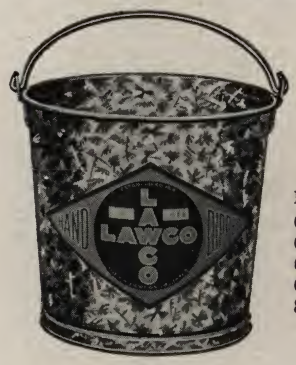
Lawco Standard Galvanized Water Pails

Hot Dipped

No.	82	102	122	142	162
Per Dozen	$5.80	6.25	7.00	7.70	8.50
Capacity ... qts.	8	10	12	14	16
Top ... in.	9½	10½	11	11½	11¾
Bottom ... in.	7½	8	8½	8¾	9
Depth ... in.	8¼	9½	10	10¾	11½
Wt. per Doz. ... lbs.	18	22	25	27	32

Lawco Heavy Galvanized Water Pails

Hot Dipped

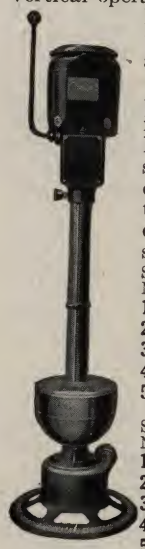


Can be furnished with stripes and wooden grips at extra charge.

No.	Per Doz.	Cap. Qts.	Top In.	Bottom In.	Ht. In.	Wt. Lbs. Per Doz.
610	$8.10	10	10⅝	8¼	9⅝	36
612	8.80	12	11 5/16	9	10	39
614	10.00	14	11¾	9⅜	10 11/16	41
616	11.30	16	12⅝	10	10 11/16	45½
820	15.60	20	13½	11½	11	58

Model K Penberthy Automatic Electric Sump Pumps

Repulsion and induction type motor, ¼ h.p., a.c., 110 volts, 60 cycles, 1750 r.p.m.; with ball thrust bearing for vertical operation. Sensitive switch is controlled by extra heavy copper float sliding freely on supporting column; adjustable stop governs water level at which pump starts.



Bronze impeller shaft fully enclosed, held to perfect alignment, and supported by bearing at both ends. Flexible spring coupling relieves motor shaft and pump shaft of sudden starting shocks. Bearings are provided with oil or grease cups. Copper and bronze construction throughout. A sump cover is recommended to exclude solid materials from accumulating in sump. Pipe connections, 1¼ in.

Size No.	Each	Sump Depth, Ft.	Height Pump	Ship. Wt. Pounds
1K	$65.00	2	3′7¼″	102
2K	85.00	3	4′7¼″	115
3K	100.00	4	5′6″	128
4K	125.00	6½	7′11″	149
5K	150.00	8½	9′10″	195

*Approximate Capacity, Gallons per Hour

Size No.	Against Discharge Head of— 1-Foot	5-Foot	10-Foot	15-Foot	20-Foot	22-Foot
1K	3600	3200	2600	1900	1000	600
2K	3600	3200	2600	1900	1000	600
3K	3600	3200	2600	1900	1000	600
4K	3600	3200	2600	1900	1000	600
5K	3600	3200	2600	1900	1000	600

*Total discharge head equals the vertical distance from water level in sump to point of discharge plus all head lost by pipe friction.

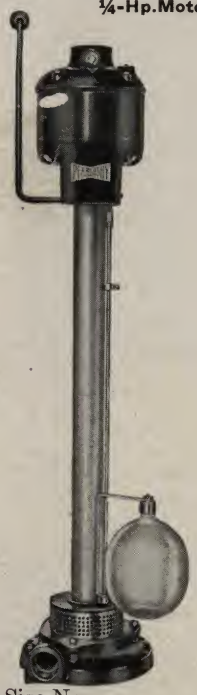
Current characteristics supplied at no extra charge: A.C., 110 v. 50 or 25 cy.; 220 v. 60, 50 or 25 cy.; or d.c., 110 v.

Add $5.00 to list for the following current characteristics: A.C., 110 v. 30 cy.; 220 v. 30 cy.; 250 v. 60 or 50 cy.; or d.c., 32, 220 or 250 v. Add $25.00 to list for 3-phase motors.

For Non-Automatic Electric Sump Pumps (less switch, float and float control) deduct $10.00 from list.

No. 43 Penberthy Automatic Electric Sump Pumps

¼-Hp.Motor—110 Volts, 60 Cycles—1750 RPM.



Split-phase type motor with built-in overload protection. Specially impregnated to resist moisture.

Equipped with grease sealed precision bearings for vertical operation.

Double shroud impeller designed to eliminate vertical thrust. Steel impeller shaft guided at lower end by special bronze alloy bearing protected from abrasive matter in sump water by automatic grit seal. Shaft provided with bronze sleeve.

Current consumption per hour, 350 watts.

Pipe connection, 1¼ inches.

Total discharge head equals vertical distance from water level in sump to point of discharge plus all head lost by pipe friction.

Capacity, against total discharge head of:

1 Foot	gph.	3000
5 Feet	gph.	2600
10 Feet	gph.	2200
15 Feet	gph.	1600
20 Feet	gph.	800
22 Feet	gph.	400

Single-pole mechanical switch installed in end bell of motor. Heavy insulated motor cord, 8 feet, with plug cap for standard outlet.

Size No.	1	2	3	4	5
No. 43 ... each	$39.50	45.00	60.00	75.00	85.00
Sump Depth ... feet	2	3	4	6½	8½
Height Pump ... feet	3⅙	4⅙	5⅙	7⅙	9⅙
Weight ... pounds	75	85	116	148	180

Other current characteristics upon application.

Model R Penberthy Automatic Cellar Drainers

The Penberthy Automatic Cellar Drainer is of distinct service for installations such as office buildings, residence or factory basements, sumps, tanks, settling basins, flywheel, elevator, coal and scale pits or wherever it is desired to remove seepage, flood or back water from point below the natural drainage level of sewer.

Operates by water or steam pressure.

Constructed of copper and brass.

Pit should be placed so that all surplus water will drain to it.

No. 1 has ½-inch supply and 1-inch discharge; No. 2 has ¾-inch supply and 1¼-inch discharge.

Working Head Ft.	Maximum Stock Drainer Capacities from Sump at 10 to 150 Pounds Water Pressure — Gallons per Hour 10	15	20	25	30	40	60	80	100	120	150	Each
No. 1												
3	80	210	300	340	400	510	700	720	700	660	600	$25.00
6	...	90	140	240	300	390	570	670	690	650	600	25.00
9	...	...	90	150	210	330	480	620	660	640	600	25.00
12	...	...	...	100	150	220	390	550	630	630	600	25.00
15	...	...	...	...	90	190	300	450	600	620	600	25.00
18	...	...	...	...	...	120	250	320	550	610	600	25.00
No. 2												
3	190	390	550	620	750	910	1180	1240	1220	1170	1100	$40.00
6	...	210	340	420	600	750	1020	1140	1200	1130	1100	40.00
9	...	...	210	300	380	540	900	1190	1150	1090	1100	40.00
12	...	...	...	210	300	420	780	1020	1110	1060	1100	40.00
15	...	...	...	...	210	370	570	940	1050	1030	1100	40.00
18	...	...	...	...	...	300	510	850	970	1000	1100	40.00

Model L Penberthy Automatic Cellar Drainers

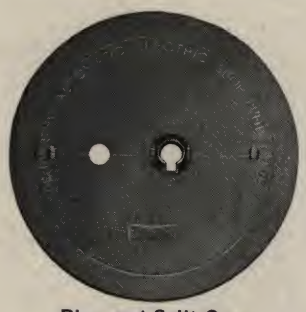
For installations, such as office buildings, residence or factory basements, sumps, tanks, settling basins, flywheel, elevator, coal and scale pits, or wherever it is desired to remove seepage, flood or back water from point below the natural drainage level of sewer.

The capacities below are the actual capacities of water taken from sump and not the combined discharge of operating and drainage water. Five pounds or more water pressure is required for each one foot of elevation.

Special drainers suitable for conditions other than listed below can be furnished at no extra charge. Special drainers can be adjusted to operate on from 2 to 4 pounds water pressure. When ordering special drainers, give operating pressure, elevation of discharge, etc.

No.	Supply Pipe In.	Suction & Discharge	Working Head Ft.	Capacities Gallons from Sump per Hour — Water Pressure Lb. per Square Inch 15	20	30	40	60	Each
3	1	1½	3	450	600	800	1100	1400	$55.00
3	1	1½	6	...	...	650	860	1200	55.00
3	1	1½	9	...	...	....	720	1000	55.00
3	1	1½	12	...	...	....	....	800	55.00
4	1¼	2	3	600	800	1200	1600	2000	80.00
4	1¼	2	6	...	....	1000	1240	1800	80.00
4	1¼	2	9	...	....	....	1040	1600	80.00
4	1¼	2	12	...	....	....	....	1200	80.00
5	1½	2½	3	750	1000	1600	2100	2700	110.00
5	1½	2½	6	...	....	1300	1620	2300	110.00
5	1½	2½	9	...	....	....	1260	1900	110.00
5	1½	2½	12	...	....	....	....	1500	110.00

Penberthy Ring and Split Sump Covers



Ring and Split Cover

For automatic electric sump pumps and automatic cellar drainers.

Designed with proper clearance for automatic control mechanism. Will hold pumps suspended in center of sumps of unusual depth. Furnished to fit standard sewer crock sumps from 15 to 24-inch. The No. 1 size cover is made of 2 halves bolted together and fits the inside of a standard 18-inch sewer crock.

Additional outer rings furnished for 21 and 24-inch crocks.

Specify cover number and size of electric pump or water operated drainer.

No.	1	2	3
Each	$8.50	12.00	15.00
Outside Diameter ... inches	19¾	24	27½
Shipping Weight ... pounds	28	47	58

Dimensions

Cover in Bell End of Crock

Size Crock, Dimension A. inches	18	21	22	24
No. of Sump Cover	1	2	2	3

Cover Over Small End of Crock

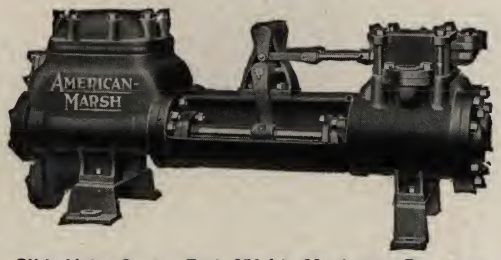
Size Crock, Dimension A. inches	18	21	22	24
No. of Sump Cover	1	2	2	3

Cover Over Top of Bell End of Crock

Size Crock, Dimension A .... inches	15	18	21
No. Sump Cover	1	2	3

American-Marsh Duplex Boiler Feed Pumps

Valve Plate Type—Side Suction—End Discharge—Steam Driven—Piston Packed



Slide Valve Steam End: 250 Lb. Maximum Pressure
Fluid End: 400 Lb. Maximum Pressure

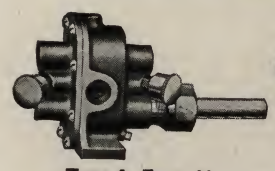
Size Pump Inches — Diam. Steam Cyl.	Diam. Fluid Cyl.	Stroke	Pipe Openings, In. — Steam	Exhaust	Suction	Discharge	Gal. per Stroke	*Max. Work. Press. per Lb. of Steam Press.	Boiler Feed Ratings Boiler Hp. Based on Gal. 34.5 Lb. per Min.	Evaporation
6	2½	6	1	1½	3	2	.128	3.75	13	195
6	3	6	1	1½	3	2	.184	2.60	19	285
Slide Valve Steam End: 250 Lb. Maximum Pressure Fluid End: 250 Lb. Maximum Pressure										
6	3	6	1	1½	3	2	.184	2.60	19	285
6	3½	6	1	1½	3	2	.250	1.90	26	390
6	4	6	1	1½	3	2	.326	1.45	34	510
7	4	8	1¼	1½	4	3	.435	2.15	42	630
7	4½	8	1¼	1½	4	3	.551	1.70	53	800

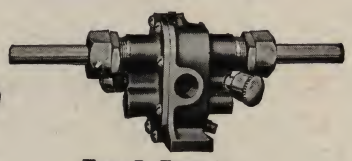
*Based on minimum steam pressure of 50 pounds. For steam pressure under 50 pounds these values will be less. The greater the drop in this operating steam pressure, the higher must be the working pressure per pound of steam pressure over the actual requirements.

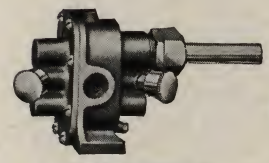
Slide valve steam ends are suitable for superheated steam only when the total temperature of steam, including superheat, does not exceed 500°F.

Larger sizes, suitable for feeding up to 10,000 BHP boilers, are available. Information on request.

Oberdorfer Bronze Geared Pumps


Type A, Form Y


Type B, Form X

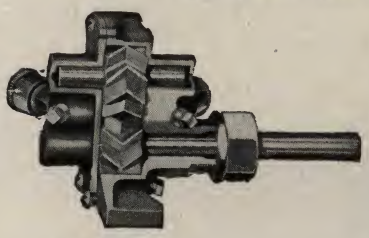

Type A, Form X

Type B, Form Y

Spur Gear Pumps

Used wherever liquid is to be moved with positive action. Made of bronze; not affected by action of most corrosive liquids. All pumps are built with large oversize fully lubricated bearings. Can be supplied in 4 types and forms shown above in all sizes from 1/8 to 1¼-inch intake and outlet.

Herringbone Gear Pumps



Herringbone gear pumps are more quiet and require less power to operate than spur gear pumps. Supplied in same types and forms as the spur gear. Can be operated in one direction only.

State direction of rotation when ordering, specifying from shaft or body side of pump.

	Type A Single Shaft		Type B Double Shaft			
No.	Spur Gear Each	Herringbone Gear Each	Spur Gear Each	Herringbone Gear Each	*Pipe Size Inches	Weight Pounds
1½	$9.00	$11.25	$9.75	$12.00	1/8	2¼
2	10.00	12.00	11.50	13.75	¼	3⅝
3	11.50	14.25	12.50	15.50	⅜	4 15/16
4	12.50	15.50	13.75	17.00	½	5⅜
7	15.00	18.75	16.50	20.00	¾	7¾
9	16.50	20.00	17.50	21.50	1	8 7/16
11	48.50	72.50	52.00	77.00	1¼	20

*Briggs standard pipe tap.

				1800 RPM. Pressure					
				0 Pounds		60 Pounds		100 Pounds	
No.	Ht. In.	Width In.	Lgth. In.	GPM.	Hp.	GPM.	Hp.	GPM.	Hp.
1½	2⅞	1 15/16	6 1/16	1.6	⅙	1.5	¼	1.4	¼
2	3½	2⅜	6 7/16	4.5	¼	3.8	½	3.3	¾
3	4	2¾	6 15/16	7.8	⅛	6.8	1	6.1	1½
4	4	2¾	7 5/16	11.3	½	9.5	1	8.6	2
7	5 3/16	3¼	7 5/16	20.0	¾	17.0	2	13.7	3
9	5 3/16	3¼	7 9/16	27.6	1	21.3	2	18.0	3½
11	6½	4 3/16	12	....	...	....	...	....	...

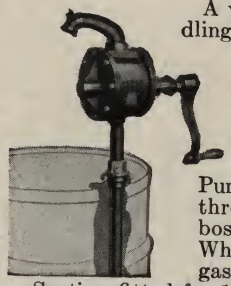
Type Z Unloader Pumps

Pumps only can be supplied or mounted on base directly connected to electric motors.

Equipped with an adjustable relief valve allowing a variable quantity of liquid under a constant pressure or a constant quantity of liquid under variable pressure to be pumped.

No.....	1½	2	3	4	7	9
Unloader, Spur Gear....each	$13.75	$14.75	$17.25	$18.75	$23.00	$24.50
Unloader, Herringbone..ea.	16.00	17.00	20.00	21.50	25.75	28.00

No. 1069EA Roper Hand Rotary Transfer Pumps



A vane type hand rotary pump for handling gasoline, oils, paints, alcohol, cutting compounds, lacquer, water and other liquids, pumping from steel drums and transferring to storage tanks.

Pump has positive suction lift. Picks up prime quickly and easily. Pump is arranged with special holder threaded to screw into a standard sized boss, 1½ or 2 inches in top of steel drum. When hose is wanted, specify whether for gasoline or water.

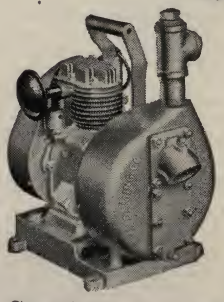
Suction fitted for 1 inch; discharge for hose connection, 1 inch; discharge less spout, 1¼ in. Capacity at 100 r.p.m. at no foot head, 12 gallons.

Shipping weight, 45 pounds.

No. 1069EA, All Iron.....each $22.50

No. 3103 Deming Portable Centrifugal Pumping Units

Vertical—Gasoline Engine Driven—Air Cooled Capacity, 3000 GPH.



Easily carried by one man. Economical to operate; runs 8 to 12 hours on one gallon of gasoline.

Casing is made of aluminum alloys. Ball bearing construction.

Furnished complete with 4-cycle industrial engine, ball bearing carbon steel crankshaft, high tension magneto. Complete with V belt pulley for use in driving auxiliary equipment, rope starter, carrying handle and suction strainer. Suction and discharge, 1¼ inches. Shipping weight, 80 pounds.

Capacity.....gpm.	60	55	48	41	33	23	13
Total Head.....feet	10	20	30	40	50	60	70

Goulds Diaphragm Suction Pumps

No. 1223, Side Suction

No. 1222, Bottom Suction

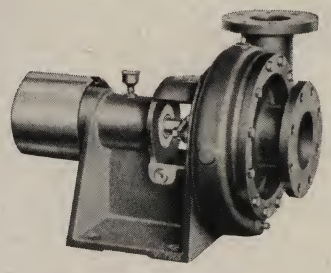
For suction lift of 25 feet.

The diaphragm is made of the best quality of rubber and is guaranteed to stand hard service. The suction valve is of metal, rubber faced and easily removable. It rests on an inclined seat and therefore offers the least obstruction to the passage of semi-fluid or solid matter. The waterways are large and permit an easy flow of fluid. The lever is made of wrought iron and is reversible; it can be used vertically or horizontally from either side or the back of the pump. This is the type most widely used by contractors and builders who have to pump out excavations.

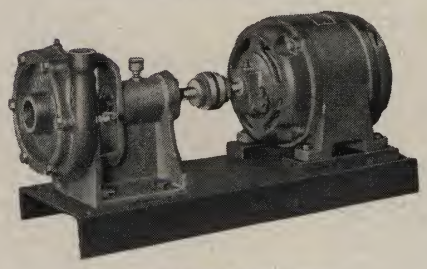
				No. 1222		No. 1223	
Size No.	Stroke In.	Suction I.P. In.	Approx. Cap. per Hour Gal.	Approx. Wt. Lbs.	Price Each	Approx. Wt. Lbs.	Price Each
2	3	2½	1800	115	.....	127	.....
3	3	3	3500	170	.....	178	.....
4	4	4	6000	256	.....	266	.....

Type CF Worthington Centrifugal Pumps

Single-Stage—Horizontal



3 CF and 4 CF Belt Driven



1 CF to 2½ CF Motor Driven

A general purpose pump used for pumping hot or cold water, brine, light oil, drainage, process waste, and similar liquids. Since dirty or gritty liquids cannot reach bearings pump will run quietly and freely regardless of unavoidable wear due to hard usage.

Available with belt or motor drive. Belt-driven pump includes pulley but no base. On sizes 1 to 2½ inches pulley is die-cast alloy, on sizes 3 and 4 inches it is cast iron. Motor-driven pump includes pin and disc flexible type coupling and structural steel base.

Box type, rigid, cast iron frame. Extra large diameter steel shaft eliminates vibration. Close-grained cast iron volute casing and suction head hydrostatically tested.

Open type impeller is balanced and keyed to shaft with vanes on back to reduce pressure on stuffing box. Self-locking impeller nut prevents leakage to threads of shaft.

Extra deep stuffing box is cast integral with casing. Bolted type stuffing box gland with ample room for adjustment or repacking. Packing is graphited asbestos.

Ball type, grease lubricated thrust and line bearings are enclosed in sealed housing.

Pumps can be fitted in the following ways according to the requirements of installation:

	Standard	All Iron	All Bronze
Casing and Suction Head..	Cast Iron	Cast Iron	Bronze
Impeller.....	Cast Iron	Cast Iron	Bronze
Impeller Nut.....	Bronze	Steel	Bronze
Shaft: Sizes 1-CF to 2½-CF	Steel	Steel	Phosphor Bronze
Sizes 3-CF, 4-CF.....	Steel	Steel	Steel
Shaft Sleeve, Sizes 3-CF and 4-CF Only.....	Bronze	Hardened Steel	Bronze
Seal Cage: Sizes 1-CF to 2½-CF.....	Zinc Alloy	Zinc Alloy	Zinc Alloy
Sizes 3-CF, 4-CF.....	Lead and Antimony	Cast Iron	Bronze
Gland.....	Forged Bronze	Forged Steel	Forged Bronze
Seal Piping.....	Copper Tubing	Not Furnished	Copper Tubing

The standard pump is recommended for cold and hot water. An all iron or all bronze pump is used for brine, and a standard or all iron pump is used for light oil.

Any suitable type of motor and starting equipment will be furnished. Motor will be mounted on the base and connected with the pump.

Worthington Balanced Monobloc Centrifugal Pumps

Motor Driven

Both pump and motor are integral parts of a single unit.

The proper distribution of ventilating air prevents moisture from being drawn into motor. Extra high motor support, prevents floor flooding. Moisture-resisting motor windings, protected by special varnish.

Extra large diameter shaft, prevents eccentricity in any moving part. Has extra large bearings. Solid front head on motor with trough, prevents drips from entering bearing.

Hand finished and balanced impeller, keyed to shaft for rigidity. Hydraulic balance, relieves pressure on stuffing box and reduces thrust. Extra deep stuffing box, reduces drip to a minimum.

Impeller lock nut of special construction, prevents leakage to shaft. Shaft sleeve extending through stuffing box, protects shaft from wear.

Pump can be standard, all bronze or all iron according to the requirements of the installation. Casing and suction head of standard pump are of close grained cast iron. Stuffing box gland is of forged bronze; has ample room for adjustment or repacking. Packing is graphited asbestos.

Standard motor construction is drip-proof. Totally enclosed, explosion-proof and other specials as well as motors for any electrical characteristics can be furnished.

Type D—Single-Stage

For general water supply, booster, circulation, boiler feed or transfer service at low or moderate heads. With enclosed impeller.

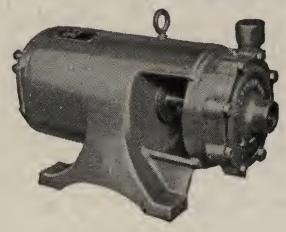
Sizes, 1 to 2½ inches. Capacities to 250 gpm. Heads to 120 feet.

Type DE—Single-Stage

For general service. With enclosed impeller.

Sizes, 1½ to 5 inches. Capacities to 1600 gpm. Heads to 300 feet.

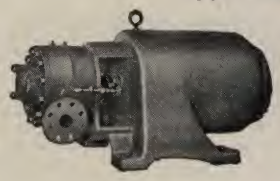
Type DD—Two-Stage



For general service at small capacities and moderate heads. With enclosed impellers.

Size, ¾ inch. Capacities to 20 gpm. Heads to 90 feet.

Type DDE—Two-Stage



For general service at moderate capacities and high heads. With enclosed impellers.

Sizes, 1½ and 2 inches. Capacities to 275 gpm. Heads to 500 feet.

Prices on Application

Deming Centrifugal Jet Pumps

Deep Well Service from a Shallow Well Pump

Two Pipe Type

Single Pipe Type

The deep well unit consists of a vertical centrifugal pump and motor placed above ground and connected by pipes to an ejector or jet in the well below the water level. This jet acts as an auxiliary pump, boosting the water to within suction distance of the centrifugal pump.

Enclosed impeller. Has a casing with two discharge connections, one being connected to the jet in well.

The regular discharge connection leading to tank or any other point of delivery is restricted by an automatic control valve which diverts part of the water down the well under sufficient pressure to operate jet. When this water leaves the nozzle tip of the jet at a high velocity, a vacuum is created at that point, and water is drawn through the strainer and foot valve into the body of the jet where it is mixed with water from the nozzle and carried upward through a pipe to within suction distance of pump.

Two Pipe Jet. The two-pipe jet is normally specified for the average well which is large enough to permit the installation of the two pipes side by side.

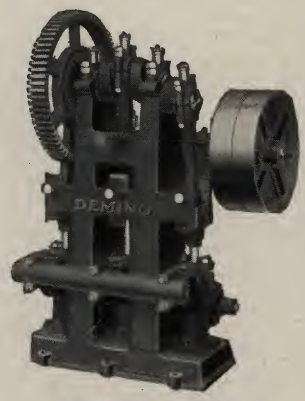
The most common type of jet is set in the well below the lowest water level and connected to the pump with two parallel pipes.

Single Pipe Jet. For wells from 2 to 6 inches in diameter. The two leather plungers used for lower attachment provide a seal between well casing and the ejector. Ejector can be easily lowered at any time by adding suction pipe at top of the well. No special tools required to expand a packer. Normal expansion of leather crimps when wet, seals space between ejector and casing.

Prices and Further Information Upon Application

No. 84 Deming Single-Acting Triplex Plunger Pumps

For High Pressure Service



Sizes 1¼x6 to 2½x6

Adapted for use in oil refineries, sugar and glucose factories, with filter and hydraulic presses, for pipe lines, or wherever pumps are required to operate against pressures for which these are designed.

Main frame consists of two standards, and includes crosshead guides and main crank shaft bearings, the latter having quickly renewable die cast anti-friction metal liners in 6, 8 and 10-inch stroke sizes. Crank shaft is of best open hearth steel casting in one piece.

Gearing is machine cut, and is double in 10-inch stroke and larger sizes. 8-inch stroke sizes made with double gearing at extra price. A guard covers pinion and adjacent teeth of crank gear. Special guards enclosing all gear teeth to order. Pinion shaft is of polished steel, running in bearings lined with best anti-friction metal and bolted to the main frame, and bearings are adjustable.

Connecting rods have bronze boxes with wedge adjustment at the crosshead end, and marine type boxes at the crank end, with quickly renewable die cast bearing liners in 6 and 8-inch stroke sizes. Plungers are of cast iron or steel in sizes up to 3 inches diameter, and larger sizes are of cast iron. Cylinders and valve chambers are of cast iron, steel or bronze, depending on the pressure against which the pump is to operate. Valves are of bronze on bronze seats.

Grease cups, or oil cups if specified, and special wrenches are furnished with all pumps.

Special construction includes pumps furnished with bronze plungers or bronze cylinders and valve chambers, or otherwise varied from standard construction, at extra price.

For different types of drive for pumps direct connected with electric motor, gas engine or other motive power, special bulletin will be sent upon request.

Plungers Inches Diam.	Stroke	Displacement Gal. per Rev.	Gal. per Min.	Normal RPM.	Max. Work. Pres. Lb.	Hp. at Max. Cat. Rating	Pipe Sizes Inches Suction	Discharge	*Tight & Loose Pulleys Inches
⅞	6	.046	2.3	50	5000	7.9	1	¾	24x 5
1¼	6	.096	5.0	53	2200	7.8	1¼	1	24x 5
1½	6	.137	7.0	52	1500	7.5	1¼	1	24x 5
1¾	6	.187	9.5	51	1100	7.4	1¼	1	24x 5
2	6	.245	12.5	52	900	7.9	2	1½	24x 5
2½	6	.383	20.0	53	600	8.4	2	1½	24x 5
3	6	.550	30.0	55	400	8.5	2½	2	24x 5
3½	6	.750	40.0	54	300	8.5	2½	2	24x 5
1	8	.082	3.7	49	5000	13.0	1¼	1	28x 6
2	8	.326	15.0	47	1200	12.7	2	1½	28x 6
2	8	.326	15.0	47	2500	26.4	2	1½	36x 8
2½	8	.510	25.0	50	800	14.0	2½	2	28x 6
2½	8	.510	25.0	50	1500	26.5	2½	2	36x 8
3	8	.734	35.0	47	500	12.6	2½	2	28x 6
3	8	.734	35.0	47	1000	25.0	2½	2	36x 8
4	8	1.305	60.0	46	550	23.4	3	2½	36x 8
4½	8	1.652	75.0	46	450	23.8	3	2½	36x 8
1½	10	.231	10.0	43	5000	34.8	1½	1¼	42x10
3	10	.918	40.0	44	1500	42.0	2½	2	42x10
5	10	2.550	110.0	44	600	46.0	4	3	42x10
5	12	3.060	125.0	42	900	80.0	5	4	48x14
6	12	4.400	180.0	41	600	76.0	5	4	48x14
3	14	1.284	50.0	39	2500	87.0	4	3	48x16
4	14	2.286	90.0	40	1400	88.0	4	3	48x16

*All 10-inch stroke and larger pumps are regularly furnished with tight pulley only.

Gear ratio, 5 to 1.

Prices upon application.

Series 400 McDonald 4-Inch Electric Deep Well Pumps

For Open Tank Service

For Raising Water from a Depth Greater than 25 Feet

Main housing is built for severe service. Internal mechanism, discharge chamber, and air compressor fully enclosed and weatherproof.

Discharge chamber is entirely independent of main housing to permit easy installation and alignment.

Provided with built in check valve to simplify discharge piping. Securely bolted to main housing after drop pipe, cylinder, and sucker rod are placed in position. Complete power mechanism is removable without disturbing parts. Dual working parts centrally located for balance.

Bearings are large for low bearing pressures, with naval bronze removable bushings on revolving shafts. All gears close grain cast iron, accurately cut. High carbon steel pinion, finished from solid billet and integral with pinion shaft.

Positive oiling, force feed to all moving parts which are not actually submerged in oil. Provides a copious oil supply without resorting to a single extra moving or wearing part. All electric controls are Underwriters' Approved.

Multiple V-belt drive from motor sheave to flat face, safety pulley on pump.

Removable type differential cylinder, large proportions to equalize motor load. Will pass largest plunger that can be removed through standard drop pipe. Designed to prevent water entering main housing.

Positive air compressor, designed to pump air full length of its stroke.

Finished in heather green enamel.

Cap. Gal. per Hr.	Diam. Cyl. In.	Max. Lift in Feet From Cyl. to Ground Level at Well 1/3 Hp.	1/2 Hp.	3/4 Hp.	Size Drop Pipe In.	Size Wood Rod In.	Size Well Casing In.	Type Cylinder Recommended
160	1 13/16	165	255	†350	2	1 1/8	3	Nos. 449SS-500SS
160	2	165	255	†350	2	‖3/8	2	Eureka No. 450
245	2 1/4	105	165	245	2 1/2	1 1/8	3 1/2	Nos. 449SS-500SS
245	2 1/2	105	165	245	2 1/2	‖3/8	2 1/2	Eureka No. 450
370	2 3/4	35	105	165	3	1 1/8	4 1/2	Nos. 449SS-500SS
515	3 1/4	...	35	110	3 1/2	1 3/8	5	Nos. 449SS-500SS
***195**	2	135	205	300	‡	‡	4	**
***305**	2 1/2	60	130	205	‡	‡	4 1/2	**
***440**	3	...	65	135	‡	‡	5	**

*Capacities when used with closed type cylinder.

†Maximum depth for which pump is recommended.

‡Tapped 1 1/4 inches. Use 3/8-inch pipe or rod. If wood rod is used specify cylinder tapped 1 1/2 inches.

‖Pipe.

**Use closed type cylinders Nos. 100SS, 110SS, and 111SS for settings up to 135 feet; No. 136-3 for settings over 135 feet.

If open tank is above pump, deduct elevation of tank from above figures for cylinder setting.

Motor Units Only

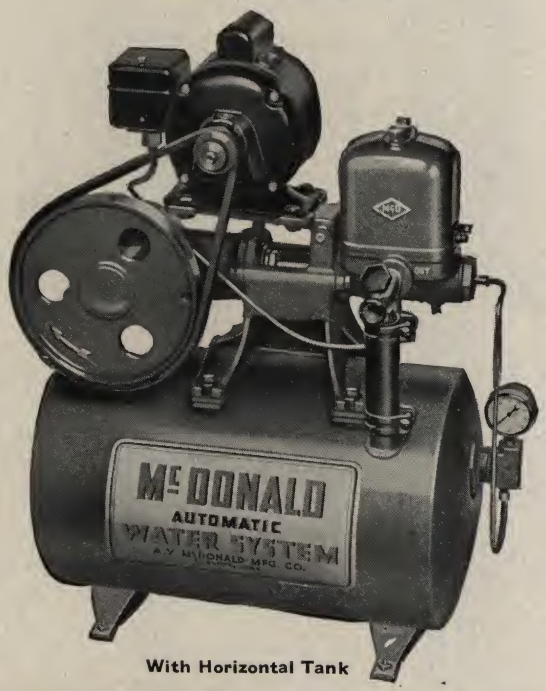
Outfit includes pump with pressure cylinder, multiple V-belt drive and standard 60-cycle, 110-220-volt, single-phase capacitor motor. No tank, piping, motor control switch, well cylinder, pump rod, or drop pipe included

Stroke, 4 inches. Strokes per minute, 60. Two drive belts. Piston rod: diameter, 5/8 inch; threads per inch, 12. Drop pipe tap, 2 1/2 inches. Discharge pipe tap, 1 1/4 inches. Standard pressure cylinder, 2 inches.

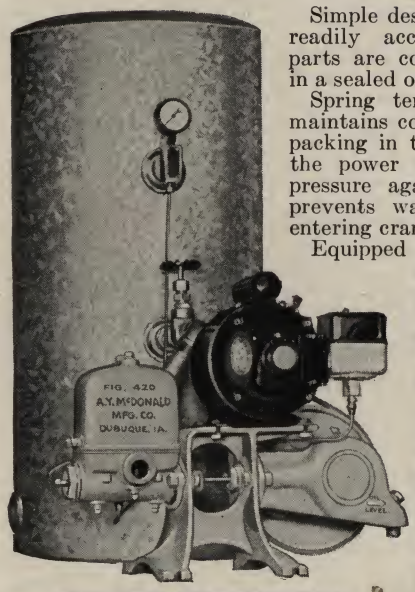
No.	**403**	**405**	**407**
Hp.	1/3	1/2	3/4
Approximate Shipping Weight.....pounds	205	215	240

Series 420 Shallow Well Water Systems

***For Total Suction Lift Not Exceeding 25 Feet**
Pressure, 20-40 Pounds



With Horizontal Tank



With Vertical Pneumatic Tank

Simple design. All parts are readily accessible. Working parts are completely enclosed in a sealed oil bath.

Spring tension stuffing box maintains constant pressure on packing in the water end. In the power end, it maintains pressure against packing and prevents water or dirt from entering crankcase.

Equipped with a capacitor motor. No radio interference. Two pole pressure switch has thermal relay for motor protection.

Valve positions may be reversed, making suction available from either side of water box. Valve decks are bronze, chromium plated.

Pump is finished in heather green enamel.

With Horizontal Tank

No.	Max. Press. Lb.	Pump Cap. Gal.	Tank Cap. Gal.	Size Suc. In.	Size Disch. In.	Motor Hp.	Width In.	Ht. In.	Lgth. In.	Wt. Lb.
250-M-10	40	250	10	3/4	3/4	1/6	12	30 1/4	25	125
250-M-25	40	250	25	3/4	3/4	1/6	17	33 1/4	31 1/2	155
350-M-10	40	350	10	1	3/4	1/4	12	30 1/4	25	130
350-M-25	40	350	25	1	3/4	1/4	17	33 1/4	31 1/2	165

With Vertical Pneumatic Tank

420-142	40	250	42	3/4	3/4	1/6	34	50	22 1/2	190
420-180	40	250	80	3/4	3/4	1/6	34	62	22 1/2	250
420-242	40	350	42	1	3/4	1/4	34	50	22 1/2	200
420-280	40	350	80	1	3/4	1/4	34	62	22 1/2	260
420-342	40	500	42	1 1/4	1 1/4	1/3	36	50	28 1/2	260
420-380	40	500	80	1 1/4	1 1/4	1/3	38	62	28 1/2	320
420-442	40	650	42	1 1/4	1 1/4	1/2	36	50	28 1/2	285
420-480	40	650	80	1 1/4	1 1/4	1/2	36	50	28 1/2	335

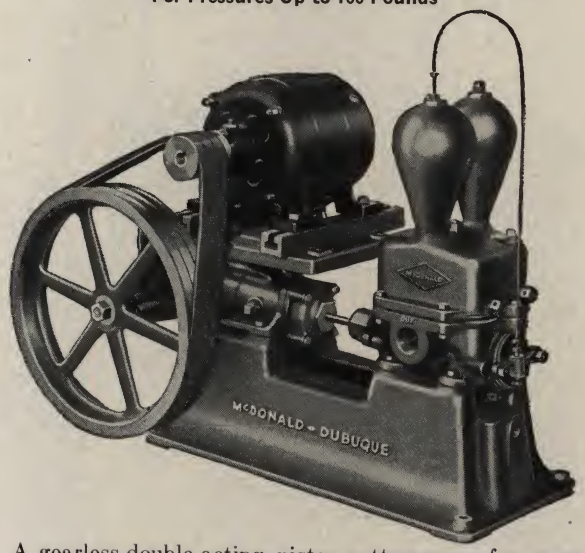
*Total suction lift includes all frictional losses.

Prices upon Request

Series 476 McDonald Shallow Well Pumps

***For Total Suction Lift Not Exceeding 25 Feet**

For Pressures Up to 100 Pounds



A gearless double acting, piston pattern pump for general water service. Electric motor driven by multiple V belts. Has Anti-Waterlog Air Injector. Can also be supplied with tight and loose pulleys for flat belt drive.

No.	2		4		8		10	
Cap. per Hour..gal.	660	660	1100	1100	2250	2250	3000	3000
Suction.....in.	1¼	1¼	1½	1½	2	2	2½	2½
Discharge.....in.	1¼	1¼	1½	1½	2	2	2½	2½
Motor.....hp.	½	1	1	2	2	3	3	5
Max. Pressure...lb.	50	100	50	100	50	100	50	100
Weight.....lb.	304	330	340	375	715	720	725	795

*Includes all frictional losses.

Prices upon application.

Fig. 52 House Force Pumps

These are good, serviceable house force pumps for use on the kitchen sink and for forcing water to an elevated tank.

Has an iron spout threaded for 1-inch iron pipe and with thread for 1-inch hose coupling at the discharge end.

Cap has **Brass Priming Plug. Back Outlet** threaded for 1-inch iron pipe. Handle can be placed in any position. **Piston Rod** is ⅝-inch brass-covered.

The **Bases** have brass valve seats and are threaded for 1¼-inch suction.

These pumps are made in either iron, brass-lined or brass body cylinders. The last is furnished polished or nickel-plated; when **Nickel-plated Cylinder** is ordered, the **Brass Body, Brass Piston Rod** and **Brass Stuffing Nut** are **Highly Polished** and **Nickel-plated**, the iron parts of the pump being neatly painted aluminum, making a most attractive pump.

In ordering state figure of pump and kind of cylinder.

Size No. 4. Size of cylinder, 3 inches.

Fig. 52, Iron	each	**$6.50**
Fig. 52, Brass-Lined	each	**6.70**
Fig. 52, Polished Brass	each	**8.55**
Fig. 52, Nickel-Plated Brass	each	**8.80**

Horizontal Double-acting Force Pumps

For Pressure or Open Storage Tanks

For Supplying Water from Shallow Wells and Cisterns not Over 25 Feet Deep

Fig. 46 **Fig. 46S**

Above illustrations show two pumps which are exactly the same except as to the handles; Fig. 46 has a solid handle, while Fig. 46S has a removable handle. The two holes in the handle socket on Fig. 46S are for attachment of pump jack.

All 46 series pumps are brass lined and equipped with best quality plunger leathers, red brass valve seats and red brass valves ground to fit.

Because cylinder and plunger are below suction and discharge valves they are always primed ready for service.

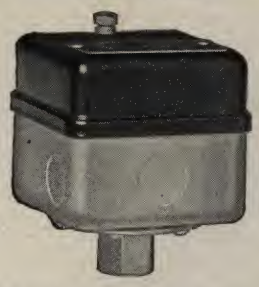
Handles can be placed at either end of pump by interchanging the cylinder heads.

When used on pressure tanks, remove the drainage plug under inlet or suction, and screw into the ¼-inch opening one of our intake air valves.

We recommend this **Intake Air Valve** for supplying air to pressure tanks.

No.	2	4	6
Fig. **46**, Brass Lined	**$13.88**	**$15.75**	**$17.63**
Fig. **46S**, Brass Lined	**14.63**	**16.50**	**18.38**
Diameter Cylinder.....inches	2½	3	3½
Stroke.....inches	4	4	4
Suction.....inches	1¼	1¼	1½
Discharge.....inches	1	1	1¼
Capacity Each Stroke.....gallons	.085	.121	.166
Weight: Fig. **46**.....pounds	46	48	55
Fig. **46S**.....pounds	48	50	57

No. E5816 McDonald Diamond Red Top Pressure Switches



An automatic electric switch to govern the pressure of a water system. Designed for controlling as large as 1 hp., a.c., single phase motors and ½ hp., d.c., motors.

No. E5816, for Operation Bet. 20 and 40 Lb. Press. ea. ....

Set-length Force Pumps

For Hand Use **Anti-freezing**

Fig. 715 SL

Compression Faucet Spout

For use on shallow wells and cisterns, and for forcing water through a hose or pipe.

Air Chamber has an inner tube extending from the stuffing box to prevent escape of air. **Piston Rod** is polished steel; brass covered rods furnished extra. **Cap** is flanged and fastened to flanged top of standard.

Extra Link, between handle and piston rod, provides the necessary play. **Handle** can be placed in any position. **Set-lengths** are 4 feet; **Stroke** is 6 inches.

Furnished with **Black Pipe,** galvanized pipe can be furnished at an extra charge. **Cylinders** are 3x10 with high grade valve and plunger leathers.

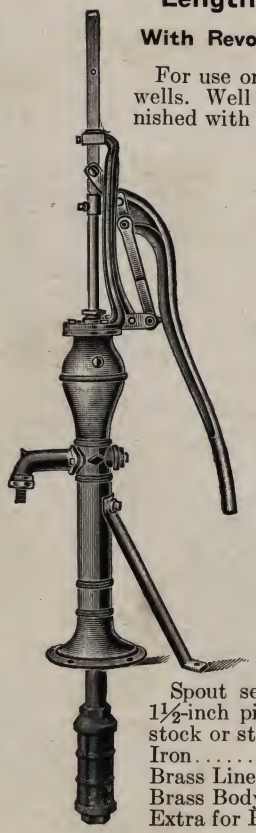
Regularly sent with iron cylinder for 1¼-inch pipe and plain spout, unless otherwise ordered.

	Price, Each — Kind of Cylinder		
No.	Iron	Brass Lined	Brass Body
4	$12.00	$14.48	$14.84

Add for Faucet Spout.....each **$1.50**

No. 716SL No. 4 McDonald Set Length Force Pumps

With Revolving Flanged Caps



For use on cisterns, shallow wells and drive wells. Well designed, strong in every part. Furnished with a hose connection so that hose can be attached to the spout. Made of galvanized pipe, rust proof bolts and set screws. Anti-freezing.

Flanged caps are attached to flanged top of standard by 3 machined bolts and handle can be placed in any position. An air tube prevents escape of air from air chamber when forcing water. Piston rods are polished steel. Cylinders are regularly 3x10 inches with high grade valve and plunger leather. Other size of cylinders can be furnished.

Regularly measures 4 feet from base to bottom of cylinder. Maximum length of pipe below cylinder, 20 feet. Has 6-inch stroke windmill top, and is suitable for operation by hand, pump jack or windmill. Has a back outlet, tapped for 1¼-inch pipe. Compression faucet spout is necessary when water is forced through back outlet.

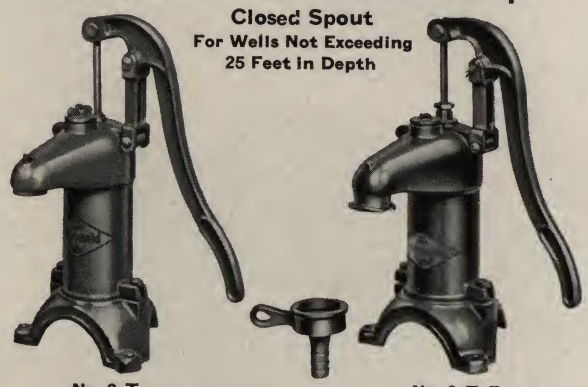
Spout section is flanged at the top with 1½-inch pipe at the lower end to make the stock or standard.

Iron.....each **$15.55**
Brass Lined.....each **18.50**
Brass Body.....each **19.20**
Extra for Faucet Spout.....each **1.40**

McDonald Tru-San Pitcher Pumps

Closed Spout

For Wells Not Exceeding 25 Feet in Depth



No. 2-T **No. 2-T-F**

Cylinder body made of sturdy close grain iron. Diamond bored for accuracy and smoothness. Extra heavy all iron plunger fitted with fine quality selected stock cup leathers. Closed type spout with oversize water area. Drip and splashproof. The No. 2-T-F is fitted to receive connection for ¾-inch hose. Leather check of ample proportion assuring positive seal on wide face iron seat. Special trip valve drains cylinder to prevent freezing.

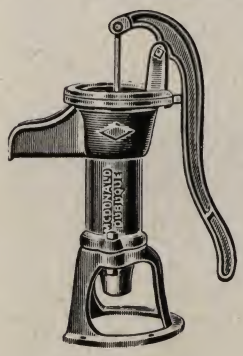
Smooth, rubbed galvanized piston rod operates through an oilite replaceable bushing in Nos. 2-T and 3-T, and through a heavy brass stuffing box in No. 2-T-F.

Priming plug accessible and generously proportioned for quick, positive priming. Bayonet type plug locks into position making pump completely sanitary.

Extra strong, ventilated bridge type base. Handle may be attached to left or right side of pump.

No.	2-T	3-T	2-T-F
Each	$2.13	2.40	2.50
Diameter of Cylinder....inches	3	3½	3
Size of Suction.....inches	1¼	1¼	1¼
Weight.....pounds	12½	16½	13

McDonald Pitcher Spout Pumps



This pump is used on shallow wells and cisterns not over 25 feet deep. Usually mounted on brackets to furnish water for kitchen sinks; also used extensively for drive wells.

Well made of best material, and furnished with polished iron or brass and nickel-plated brass cylinders. Revolving cap allows handle to be placed where desired. Equipped with trip valve, so that by raising the handle until the plunger strikes and releases the lower valve, the cylinder is drained of water to prevent freezing.

The use of these pumps with **Polished or Nickel-Plated Brass Cylinders** is recommended as the heavy seamless brass tubing will not corrode and plunger leathers will wear much longer than in an iron cylinder. Brass cylinders are either polished brass or nickel-plated brass. The nickel-plated cylinder, however, is more attractive and easier to keep bright and clean. Pitcher spout pumps with brass cylinders have brass valve seats. Fitted for iron pipe only, unless otherwise specified.

If lead pipe ferrule is wanted, there will be a small extra charge. For brass valve seat in iron pitcher spout a small extra charge is made.

No.	Iron Each	Brass-Lined Each	Polished Brass Each	Nickel-Plated Brass Each	Diameter Cylinder Inches	Suction Pipe Inches	Weight Pounds
1	$2.50	....	....	....	2½	1	19
2	2.50	$5.00	$8.50	$9.35	3	1¼	22
3	3.00	....	....	....	3½	1¼	26
4	5.00	....	....	....	4	1½	30
5	8.50	....	....	....	4½	2	35

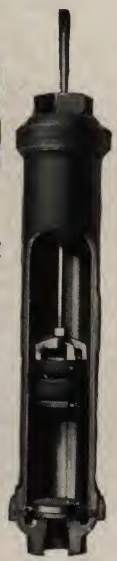
Deming Improved Cylinders

With Outside Caps

A Plunger

J Plunger

With A Plunger



With J Plunger

The Deming Brass Valve Seat, which prevents particles of sand from lodging on the seating surface and interfering with the proper working of the valve, is regularly furnished on all these cylinders. The lower valve is of the hinged leather type.

No. 300 is an iron cylinder with lower valve seat of brass.

No. 308-A is a brass-lined cylinder with lower valve seat of brass.

No. 308-B is a brass-lined cylinder with plunger cage, plunger valve and lower valve seat of brass.

No. 312-A is a brass body cylinder with plunger cage, plunger valve and lower valve seat of brass.

No. 312-B is a brass body cylinder with complete plunger and lower valve seat of brass.

No. 312-C is an all brass cylinder with all metal parts of brass.

Iron and Brass-Lined Cylinders

I.D. Inches	*Stroke Inches	Capacity per Stroke Gallons	For Pipe Inches	For Well Rod Inches	Length Over All Inches
2½	6	.128	1¼	7/16	13½
2½	10	.213	1¼	7/16	17¼
3	6	.184	1¼	7/16	14
3	10	.306	1¼	7/16	17½
3½	6	.25	1½	7/16	14
3½	10	.417	1½	7/16	17¾
4	6	.326	2	7/16	14½
4	10	.544	2	7/16	18

*Cylinders with 6-inch stroke are fitted with an A (single leather) plunger. Cylinders with 10-inch stroke are fitted with a J (double leather) plunger.

Iron and Brass-Lined Cylinders

I.D. Inches	No. 300 Each	No. 308-A Each	No. 308-B Each	Extreme O.D. Inches	Approx. Weight Pounds
2½	$2.70	$5.35	$5.90	3¾	9½
2½	3.90	6.65	7.25	3¾	12
3	2.85	5.45	6.25	4¼	11
3	4.60	7.25	8.00	4¼	14
3½	4.10	6.40	7.25	4¾	14½
3½	6.10	8.75	9.70	4¾	19
4	5.25	7.85	9.00	5¼	18
4	8.00	11.25	12.50	5¼	23½

Brass Body Cylinders

I.D. Inches	No. 312-A Each	No. 312-B Each	No. 312-C Each	Extreme O.D. Inches	Approx. Weight Pounds
2½	$6.35	$7.25	$9.24	3½	8
2½	7.67	8.77	11.81	3½	13
3	6.83	7.98	10.19	4	9½
3	8.03	9.56	12.71	4	16
3½	8.03	9.82	12.44	4½	12
3½	9.66	11.46	15.59	4½	18
4	10.10	13.02	16.22	5	14½
4	12.60	14.81	19.95	5	25

No. A-1 Clayton Mark All Brass Well Pump Cylinders

With Flush Caps and Spring Controlled Valves

Recommended for all types of pumps. Especially efficient on fast working deep well pumps operating at high speeds. Also used for small cased wells where more water is required than is obtainable from open type cylinders of smaller diameter.

Cylinder body is made of seamless brass tubing. Caps are all brass and lower cap and valve seat are cast in one piece. Valves are all brass spring controlled type with monel metal springs and red rubber poppet facings.

Plunger is fitted with two waterproof frictionless cup leathers. Follower rings are built up around contour of bottom of cup leathers to give leathers full support. Rings separating cup leathers have a recess around center of ring to admit sufficient volume of water to force the leathers to the cylinder wall for their entire length. Leathers will not buckle or break down under a load with this construction.

Size rod in plunger, 7/16 inch.

Strokes allow a clearance of two inches or more. Longer strokes furnished at extra cost.

Caps will be furnished with special tapping by order only, as follows: sizes 2¼, 2½, and 2¾ inches, 1½-inch tapping; sizes 3 and 3¼ inches, 1½ and 2-inch tapping; size 3½ inches, 2-inch tapping; and size 4 inches, any size up to 2½-inch tapping.

Order by trade number, stating inside diameter and stroke.

Inside Diam. and Stroke In.	Length of Barrel In.	Length Overall In.	Caps Tapped Pipe Size In.	Smallest Well Cylinder Enters In.	Cap. per Stroke Gal.	Approx. Net Weight Each Lb.	Each
1⅜x 9	18	19½	1	2	.058	4½	$9.25
1⅜x15	24	25½	1	2	.096	5½	9.65
1 13/16x6	14	16	1	2	.067	4¾	8.70
1 13/16x8	16	18	1	2	.089	5	9.15
1 13/16x10	18	20	1	2	.112	5¼	9.55
1 13/16x12	20	22	1	2	.134	5½	10.00
2 x 6	14	16	1¼	2½	.082	6¼	8.80
2 x 8	16	18	1¼	2½	.109	6¾	9.25
2 x10	18	20	1¼	2½	.136	7¼	9.65
2 x12	20	22	1¼	2½	.163	7¾	10.10
2¼x 6	14	16	1¼	3	.103	7¼	9.25
2¼x 8	16	18	1¼	3	.138	7¾	9.85
2¼x10	18	20	1¼	3	.172	8¼	10.50
2¼x12	20	22	1¼	3	.205	8¾	11.15
2½x 6	14	16	1¼	3	.128	8½	9.75
2½x 8	16	18	1¼	3	.170	9	10.40
2½x10	18	20	1¼	3	.213	9½	11.05
2½x12	20	22	1¼	3	.256	10	11.65
2¾x 6	14	17	1¼	3½	.154	10¾	10.25
2¾x 8	16	19	1¼	3½	.206	11¼	11.20
2¾x10	18	21	1¼	3½	.257	11¾	11.70
2¾x12	20	23	1¼	3½	.308	12¼	13.10
3 x 6	14	17	1¼	3½	.184	10½	10.90
3 x 8	16	19	1¼	3½	.245	11¼	11.75
3 x10	18	21	1¼	3½	.306	12	12.60
3 x12	20	23	1¼	3½	.367	12¾	13.45
3¼x 5	14	17	1¼	4	.180	13¼	11.25
3¼x 7	16	19	1¼	4	.251	13¾	12.30
3¼x 9	18	21	1¼	4	.322	14¾	13.35
3¼x11	20	23	1¼	4	.394	15½	14.40
3½x 5	14	17	1½	4	.208	15	12.60
3½x 7	16	19	1½	4	.292	16	13.65
3½x 9	18	21	1½	4	.375	17	14.70
3½x11	20	23	1½	4	.458	18	15.75
4 x 5	14	17	2	5	.272	20	16.05
4 x 7	16	19	2	5	.380	21	17.45
4 x 9	18	21	2	5	.490	22	18.80
4 x11	20	23	2	5	.598	23	20.15

No. 454 Clayton Mark All-Brass Deep Well Pump Cylinders

With Spring-Controlled, Poppet Type Valves

Cylinder has a heavy brass barrel and brass caps. The valves have monel metal springs and are interchangeable in Clayton Mark Brass-Body and Brass-Lined Open Type Cylinders.

Plunger is fitted with waterproof, frictionless cup leathers, and the poppets have red rubber facing.

Regularly furnished with 2-leather plunger; 3 or 4-leather plungers furnished at small additional cost. For 4-leather valves, increase 3-leather price same amount as difference between 2 and 3-leather plunger.

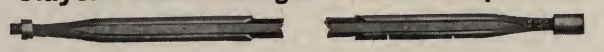
Strokes listed allow a clearance of 2 inches or more with 2-leather plunger. The stroke will be about 1 inch shorter with each additional leather on plunger.

Cylinder can be furnished with open spool poppets, spring-controlled, on sizes 1⅜, 1 13/16, 2¼ and 2¾ inches, at same prices.

I.D. In.	Stroke In.	Over-all Lgth. In.	Caps Tapped Top In.	Caps Tapped Bottom In.	Smallest Well Cyl. Will Enter In.	Cap. Per Stroke Gal.	*Approx. Net Wt. Lb.	With 2-Lea. Plunger Each	With 3-Lea. Plunger Each
Plunger Tapped for ⅜-Inch Pipe Thread									
1⅜	6	16½	1½	1	2½	.038	3½	$10.20	$10.80
1⅜	10	20½	1½	1	2½	.064	4	10.80	11.45
1⅜	16	24	1½	1	2½	.192	5½	11.40	12.10
Plunger Tapped for ⅝-Inch—12 Threads									
1 13/16	6	17	2	1¼	3	.067	5	$11.55	12.40
1 13/16	10	21	2	1¼	3	.112	5½	12.20	13.00
1 13/16	12	23	2	1¼	3	.134	7	12.80	13.65
1⅞	6	18½	2	1¼	3	.072	8	12.20	13.00
1⅞	9	21½	2	1¼	3	.107	8½	12.80	13.65
1⅞	15	27½	2	1¼	3	.179	9½	13.45	14.30
2¼	6	19½	2½	1½	3½	.105	10½	16.00	16.60
2¼	10	23½	2½	1½	3½	.172	11½	16.90	17.55
2¼	14	27½	2½	1½	3½	.240	12½	17.85	18.50
2¼	20	33½	2½	1½	3½	.344	14	18.80	19.45
2¾	6	22	3	2	4	.154	15	21.80	22.65
2¾	12	28	3	2	4	.308	16½	23.05	23.90
2¾	18	34	3	2	4	.462	18	24.30	25.15
2¾	24	40	3	2	4	.617	19½	25.55	26.40
Plunger Tapped for ⅞-Inch—10 Threads									
3¼	12	29	3½	2½	5	.430	24	$40.80	$41.60
3¼	18	35	3½	2½	5	.640	26½	42.35	43.15
3¼	24	41	3½	2½	5	.860	29	43.95	44.75
3¾	12	29	4	3	6	.570	32½	50.20	52.10
3¾	18	35	4	3	6	.860	35	52.10	54.00
3¾	24	41	4	3	6	1.150	37½	54.00	55.85
3¾	30	47	4	3	6	1.440	39½	55.85	57.75
4¼	12	30	4½	3½	6	.736	39	72.75	74.85
4¼	18	26	4½	3½	6	1.100	42	74.85	76.95
4¼	24	42	4½	3½	6	1.470	45	76.95	79.05
4¼	30	48	4½	3½	6	1.840	48	79.05	81.15
Plunger Tapped for 1⅛-Inch—8 Threads									
4¾	12	36	5	4	8	.920	67	$97.15	101.55
4¾	18	42	5	4	8	1.380	70	100.90	105.30
4¾	24	48	5	4	8	1.840	73	104.70	109.10
5¾	12	36	6	5	8	1.350	87	144.90	151.85
5¾	18	42	6	5	8	2.020	91	149.95	156.85
5¾	24	48	6	5	8	2.700	95	153.95	161.90

*Weights are for 2-leather plungers.

Clayton Mark Octagon Wood Pump Rods



For all depth wells.

Made of first quality ash and furnished in random lengths of from 14 to 22 feet. Couplings are forged steel.

In ordering, state whether rods are wanted blank, with black couplings, or with galvanized couplings.

Used in Pipe Size Inches	Wood Rod Size Inches	Tapered Blank: Approx. Wt. Lb. per 100 Ft.	Tapered Blank: Per 100 Ft.	With Couplings: Approx. Wt. Lb. per 100 Ft.	With Couplings: Black Per 100 Ft.	With Couplings: Galvanized Per 100 Ft.
2	1⅛	35	$11.15	45	$19.75	$21.95
2½	1⅜	45	16.10	75	28.35	31.50
3	1⅝	70	19.85	100	32.95	36.65
3½	1⅞	100	26.00	150	44.80	49.80
4 to 5	2¼	125	58.20	200	92.30	102.55
6	2½	165	69.30	240	105.45	117.20
8 to 10	3½	325	117.75	450	197.75	219.80

Clayton Mark Brass Jacket Drive Well Points

Recommended for use in sand and fine gravel.

Body forged one-piece steel and perforated with rectangular holes. Galvanized by hot-dip process after forging and punching.

Jacket made of brass wire cloth and hot galvanized perforated sheet steel securely soldered to point body.

Maximum inlet area and driving strength.

No.	Number of Gauze: 40-50 and 60 Each	20-30 and 70 Each	80 Each	90 Each	100 Each	Add to List for Wire Netting Each	I.D. In.	Nom. Lgth. Point In.	Nom. Lgth. Jacket In.	Approx. Net Wt. Lb. Each
90	$2.30	$2.75	$3.40	$3.90	$5.00	$.50	1¼	24	18	6¾
94	2.90	3.45	4.10	4.80	6.30	.50	1¼	30	24	8
98	3.55	4.15	4.80	5.70	7.60	.60	1¼	36	30	9¼
100	4.20	4.85	5.50	6.60	8.90	.60	1¼	42	36	10½
102	4.80	5.55	6.20	7.50	10.20	.65	1¼	48	42	11¾
136	3.90	4.70	5.35	6.40	7.70	.70	1½	24	18	7¼
140	4.90	5.80	6.55	7.85	9.70	.70	1½	30	24	8¾
144	5.90	6.90	7.75	9.35	11.60	.85	1½	36	30	10¼
146	6.90	8.00	8.95	10.85	13.55	.85	1½	42	36	11¾
148	7.85	9.10	10.20	12.30	15.45	1.00	1½	48	42	13¼
160	6.15	7.05	7.70	8.95	10.55	1.00	2	24	18	10½
164	7.35	8.35	9.20	10.90	13.05	1.00	2	30	24	12½
168	8.60	9.70	10.65	12.60	15.50	1.15	2	36	30	14½
170	9.80	11.00	12.15	14.40	18.00	1.15	2	42	36	16½
172	11.00	12.30	13.65	16.25	20.45	1.30	2	48	42	18½
184	14.75	16.80	18.80	21.30	24.55	1.50	2½	36	30	21½
188	18.85	21.65	24.55	27.90	32.75	1.80	2½	48	42	27
200	19.60	22.55	25.35	27.85	33.55	2.00	3	36	30	29½
204	24.55	28.25	31.90	35.20	42.55	2.50	3	48	42	35¾

Unlisted diameters and lengths at proportionate prices.

Clayton Mark Wood Rod Couplings

Of malleable iron; furnished black or cadmium plated. Standard pipe size threads cut sharp and true for straight joint. Each member socketed to receive rod ends.

No.	432	435	436
Black ... each	$.57	$.78	$1.25
Galvanized ... each	.62	.84	1.31
Wood Rod ... inches	⅞x1⅛	⅞x1⅛	1⅛x1⅛
Box and Pin:			
Pipe Size ... inches	⅜	⅜	½
Threads ... per inch	18	18	14
Holes ... per blade	2	3	3
Rivet Size ... inches	¼x1⅜	¼x1½	¼x1⅞
For Pipe Size ... inches	2	2	2½
Approx. Weight per Set ... pounds	1	1½	1¾

Clayton Mark Wood Rod Couplings

Made of wrought steel. Box and pin parts are solid hexagon steel with wrench-grip sections. Threads are standard pipe size, cut sharp and true for straight joint. Curved blades for octagon wood rod.

No.	437	438	439
Black ... per set	$.62	$.78	$1.16
Galvanized ... per set	.67	.84	1.31
Wood Rod Size ... inches	1⅛	1⅛	1⅜
Box and Pin Pipe Size ... inches	⅜	⅜	½
Box and Pin Threads ... per inch	18	18	14
Rivet Holes per Blade ...	2	3	3
Rivet Set ... inches	¼x1⅝	¼x1⅝	¼x1⅞
Used in Pipe Size ... inches	2	2	2½
Approx. Weight per Set ... pounds	1½	2¾	3½

No. 75LP

No. 75 Cook WW Strainers

The Cook WW Strainer has (1) direct inlet; (2) a self-cleaning slot, larger inside than outside; (3) one metal, hard drawn. The Cook WW Strainer offers the largest inlet area consistent with a safe margin of strength. Bars, placed in position in the winding machine, form a supporting skeleton for coils of wire. As the skeleton of bars revolves, each bar is notched ahead of the wire, which is then laid and calked in the notch made. After a section (10- or 5- or 3⅓-foot) has been wound, provision is made for screwing couplings (or welding or riveting bands) to both ends of the skeleton of bars.

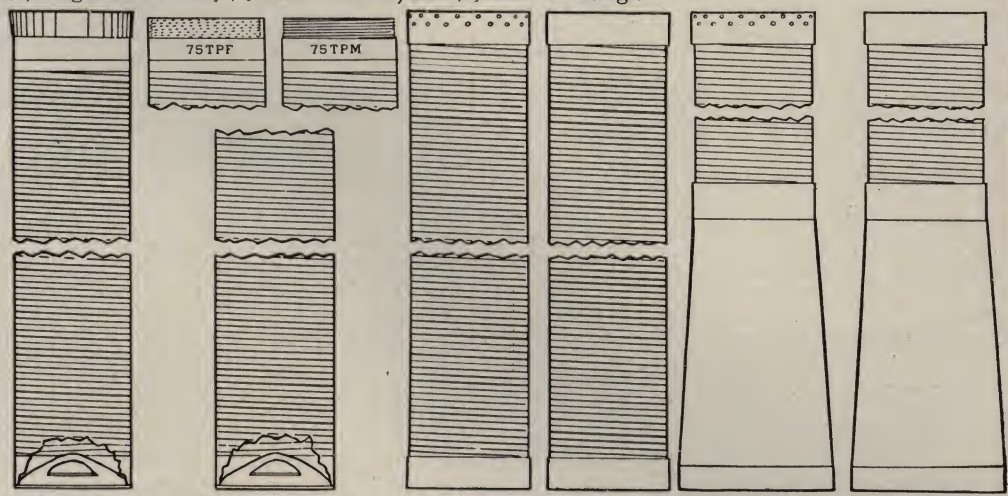
Certain alloys have become standard in the construction of the Cook WW Strainer. Red brass (85% copper, 15% zinc), a medium-priced alloy, offering a high resistance to corrosion, is recommended for general use. Silicon bronze (96% copper, 3% silicon, 1% mangenese or zinc) can be furnished, if specified. It possesses greater tensile strength than red brass.

Iron, refined to a high degree of purity, can also be furnished if specified.

In the construction of Cook WW Strainers are used: (1) three sizes of specially drawn wire —.09, .1467, and .1875 inches; (2) three sizes of bars—.156, .25, and .375 inches.

The size of well determines diameter of strainer; the size of sand-and-gravel particles, the width of slot. The factors of diameter of strainer and width of slot indicate the combination of wire and bar required.

How to Order: Give (1) inside diameter of casing that strainer must enter; (2) slot number; (3) length of strainer; (4) kind of metal; and (5) kind of fittings.



No. 75LP No. 75TP No. 75RS No. 75WS No. 75RC No. 75WC

No. 75LP

No. 75LP. Wire-wound section with lead packer at top and bail plug at bottom.

No. 75TP. Wire-wound section with female or male-threaded coupling at top and bail plug at bottom. (Pipe thread instead of strainer thread will be furnished when specified.)

No. 75RS. Wire-wound section with band and holes for riveting at top and with shoe on bottom.

No. 75WS. Wire-wound section with band for welding at top and with shoe on bottom.

No. 75RC. Wire-wound section with band and holes for riveting at top and with cone on bottom.

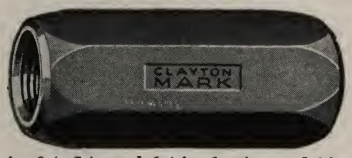
No. 75WC. Wire-wound section with band for welding at top and with cone on bottom.

Sections Joined by Screwed Couplings

Nominal Size of Strainer Inches	Outside Diameter of Strainer Inches	Clear Opening Through Strainer Inches	Strainer: Red Brass Per Foot	Strainer: Silicon Bronze Per Foot	Strainer: Iron Per Foot	Fittings: Standard—Lead Packer and Bail Plug or Pipe Fittings: Red Brass Each	Fittings: Standard: *Silicon Bronze Each	Fittings: Standard: †Steel Each	Fittings: Special (in Steel): Shoe Each	Fittings: Special (in Steel): Cone Each	Approx. Shipping Weight per 10-Foot Section Pounds
5⅝	5¼	4 9/16	$12.00	$14.75	$9.75	$12.00	$14.00	$10.00	.....	.....	100
6	5⅝	4¾	14.75	16.25	10.50	21.00	23.25	10.75	.....	.....	120
8	7½	6⅝	21.25	23.50	14.25	29.75	33.00	14.00	.....	.....	160
‡10	9½	8⅝	29.75	33.00	19.00	45.00	50.00	17.75	.....	.....	220
‡12	11½	10⅝	39.25	44.00	21.50	52.50	72.00	21.00	.....	.....	280
15-OD	13¾	12½	47.00	52.00	32.00	55.75	89.00	42.00	.....	$68.00	330
16-OD	14¾	13½	51.00	61.00	34.00	79.50	127.00	60.00	.....	72.00	350
18-OD	16⅝	15⅜	67.00	81.00	41.00	167.00	267.00	125.00	.....	75.00	425
20-OD	18⅝	17⅜	77.00	92.00	47.00	242.00	387.00	181.50	.....	80.00	500
24-OD	22 9/16	21¼	95.00	117.00	56.00	372.50	596.00	279.00	.....	88.00	600
Sections Joined by Bands											
Welded Bands											
16-ID	§17⅜	16	$75.00	$92.00	$44.00	.....	.....	.....	$10.13	$72.00	420
18-ID	§19⅜	18	85.00	103.00	49.00	.....	.....	.....	10.70	74.70	460
20-ID	§21⅜	20	93.00	112.00	53.00	.....	.....	.....	11.20	80.00	530
24-ID	§25⅜	24	111.00	127.00	64.00	.....	.....	.....	12.00	88.00	610
Riveted Bands											
26-ID	§27½	26	$120.00	$147.00	$70.00	.....	.....	.....	$12.50	$93.35	‖335
36-ID	§37½	36	161.00	196.00	91.00	.....	.....	.....	15.00	112.00	¶300
38-ID	§39½	38	172.00	209.00	99.00	.....	.....	.....	15.35	117.35	¶320
40-ID	§41½	40	181.00	221.00	104.00	.....	.....	.....	16.00	122.70	¶333

*Red brass fittings are regularly furnished for silicon bronze strainers; if specified, silicon bronze fittings.
†Electric steel casting fittings are used with iron strainers.
‡Special heavy type WW Strainer in sizes 10 and 12 inches can be furnished at 15 per cent above prices shown above.
§Outside diameter of bands. ‖5-Foot section. ¶3⅓-Foot section.

No. 720 Clayton Mark Hexagon Steel Pump Rod Couplings



Made from solid bar stock. Cadmium plated; threads and outside surface rustproof. Ends tapered. *Furnished with regular pump-makers standard thread in ⅜, 7/16 and ½-inch sizes; ⅝-inch size furnished with 12 threads per inch for steel rod unless otherwise ordered.

Packed 25 pieces per box; ⅜, 7/16 and ½-inch sizes.

Rod Size Inches	Per 100 Pieces	Rod Threads per Inch	Wt. Lb. per 100 Pieces	Rod Size Inches	Per 100 Pieces	Rod Threads per In.	Wt. Lb. per 100 Pieces
⅜ x⅜	$7.80	14	11	¾x⅝	$77.50	10x12	31
7/16x7/16	7.80	12	10	⅞x⅞	129.20	10	31
7/16x⅜	7.80	12x14	10	⅞x⅜	129.20	10x14	47
½ x½	7.80	12	10½	⅞x7/16	129.20	10x12	45
½ x⅜	7.80	12x14	12	⅞x½	129.20	10x12	43
½ x7/16	7.80	12	12	⅞x⅝	129.20	10x12	41
⅝ x⅝	16.80	12	15	⅞x¾	129.20	10	39
⅝ x⅜	16.80	12x14	17	1 x1	129.20	10	40
⅝ x7/16	16.80	12x12	16¾	1 x⅜	129.20	10x14	58
⅝ x½	16.80	12x12	15½	1 x7/16	129.20	10x12	55
¾ x¾	77.50	10	29½	1 x½	129.20	10x12	53
¾ x⅜	77.50	10x14	35½	1 x¾	129.20	10	40
¾ x7/16	77.50	10x12	34	1 x⅝	129.20	10x12	44
¾ x½	77.50	10x12	33	.....	.....	.....	..

*N.C. or U.S.S. threads can be furnished at the same prices on special order. Threads per in.: ⅜-in. size, 16 threads; 7/16-in., 14 threads, ½ in., 13-threads.

No. 428 Hexagon Steel Reducer Couplings

For connections between pipe and steel pump rod.

Thread Size	Per 100	Thread Size	Per 100
⅜" Pipe x ⅜" Pipe	$25.90	½" Pipe x ½" Pipe	$38.90
⅜" Pipe x ⅜" Rod	25.90	½" Pipe x ⅜" Pipe	38.90
⅜" Pipe x 7/16" Rod	25.90	½" Pipe x ⅜" Rod	38.90
⅜" Pipe x ½" Rod	25.90	½" Pipe x 7/16" Rod	38.90
⅜" Pipe x ⅝" Rod	25.90	½" Pipe x ½" Rod	38.90
.....	.....	½" Pipe x ⅝" Rod	38.90

No. 526 Clayton Mark Iron Check Valves

Horizontal

Has iron-weighted leather clapper.

Size Pipe In.	Black Each	Galvanized Each	O.D. Valve Leather Inches
¾	$2.10	$3.15	4½
1	2.65	3.70	5
1¼	3.15	4.75	5
1½	4.20	6.30	5½
2	5.80	8.40	6½
2½	12.60	19.95	7¼
3	15.75	25.20	7¾

No. 618 Clayton Mark Malleable Iron Drive Caps

For driving pipe and well joints. Threads are standard. State size.

Size Pipe, In.	Each	Wt. Lb.	Size Pipe, In.	Each	Wt. Lb.
1¼	$.55	1½	2½	$2.55	5¼
1½	.65	2	3	3.25	6¼
2	1.15	3¼	4	3.90	9½

Clayton Mark Sand Pumps and Drills

No. 615

Drilling member is forged from steel and properly tempered.

Tapped for standard pipe size thread.

Ball poppet is furnished with either type.

No. 616

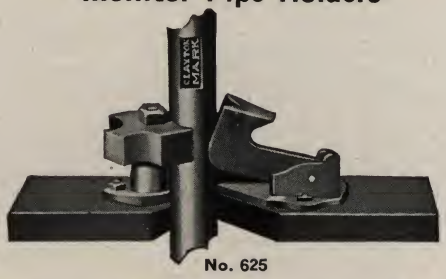
Well Size Inches	Each	Tapped for Pipe Inches
1¼	$4.65	½
1½	4.65	¾
2	4.65	1
2½	7.00	1
3	9.30	1¼
4	11.55	2

No. 629 Clayton Mark Sand Pumps

Sizes 2 to 5 inches made of seamless steel tube; larger sizes made of galvanized sheet steel. Standard length of body is 4 feet; longer lengths at extra price.

Well Size Inches	No. 629 Each	Bottom Only Each	Extra Length Add, per Foot	Approx. Wt. Lb.
2	$5.85	$2.95	$.85	9¼
2½	6.40	3.50	.85	13
3	7.00	4.05	1.05	17
4	9.30	5.25	1.50	29½
5	11.65	6.40	2.10	35¼
6	13.95	7.55	2.70	55
8	18.65	8.70	4.55	109½

Monitor Pipe Holders



No. 625

For use with pipe sizes 1-inch to 2-inch, both inclusive. Pipe cannot slip. Adjustment is automatic. The dog is raised with the toe, making it impossible to trip by dropping tools or other articles on it.

No. **625** (Old Pattern No. 2).....each **$8.70**
No. **635** (New Pattern No. 1).....each **10.50**

Walworth Cast Iron Screwed Strainers

For male thread strainer, screw in a close nipple.

Size Inches	No. 2270 Female Thread Black Each	No. 2271 Female Thread Galv. Each	Length Inches	Largest Diam. Inches
¾	$.60	$.90	3 7/16	2 1/16
1	.80	1.20	4⅛	2 7/16
1¼	1.00	1.50	4⅜	2¾
1½	1.50	2.00	4⅞	3 3/16
2	2.00	3.00	5½	3⅞
2½	3.00	4.00	6⅜	4⅝
3	4.00	6.00	7	5⅜
4	7.50	12.00	7⅞	6 15/16
5	9.50	14.00	8⅞	8⅜
6	13.00	20.00	9⅜	9½
8	30.00	40.00	11⅝	12¼

No. 533 Clayton Mark Spring Foot Valves

All Brass—With Strainer

Silent, positive, spring controlled check valve. Body is 2 pieces and can be taken apart for cleaning or replacement of parts. Poppet is brass with monel metal spring and beveled red rubber facing.

Strainer part is perforated sheet brass; No. 2 perforation regularly furnished.

Size Pipe In.	Each	Enters Pipe Inches	Lengths Over All Inches	Weight Pounds
¾	$2.20	2	5	1
1	2.30	2½	5¾	2
1¼	3.00	2½	6⅜	2½
1½	5.00	3	7⅞	4¼
2	7.50	4	9⅜	7
2½	16.90	5	10¼	14
3	23.65	6	11⅝	20

Clayton Mark Brass Foot Valves

No. 535-S

With Slotted Conical Brass Strainer

For heavy duty with high speed and water jet pumps.

The one-piece brass body foot valve operates silently and checks perfectly. Poppets are open spool type with red rubber facings and monel metal springs, or bronze balls. Conical strainer is slotted, not inside cut V-slot, seamless brass tubing. Valve with No. 18 slot (equivalent to No. 40 mesh gauze) furnished unless otherwise ordered.

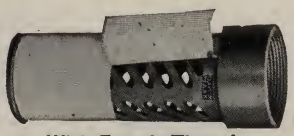
Strainer will service capacity of connecting pipe. Valve with ball check is for use with liquids injurious to rubber facing.

No. 535-B

Pipe Size Inches	No. 535-S Each	No. 535-B Each	Enters Pipe Inches	Approx. Wt. Lb.
¾	$2.50	$2.95	1¼	½
1	3.10	3.80	1½	1
1¼	3.70	4.45	2	1½
1½	7.55	8.25	2½	2
2	11.85	12.95	3	3½
2½	18.55	20.60	4	11
3	22.00	24.20	5	19
4	37.10	40.85	6	29

Malleable Iron Suction Pipe Strainers

With Set Screw



With Female Thread

Made of high grade malleable iron, except Nos. 514, 515, 524 and 525 which have perforated pipe body. Furnished galvanized without covering, or with brass gauze covering or perforated sheet brass Nos. 2, 4, 6 or 8 perforation.

Strainers with No. 60 gauze covering will be furnished unless otherwise specified. Strainers with perforated sheet brass covering take same price as No. 60 gauze covering.

Furnished with set screw, male thread or female thread at same price. Order by number, stating whether without gauze, with gauze, or with perforated sheet brass giving number of perforation.

With Set Screw No.	With Male Thread No.	With Female Thread No.	Standard Pipe Size Thread Inches	Without Gauze Covering Each	With Gauze or Perforated Sheet Brass Each
499	509	519	¾	$.60	$.75
500	510	520	1	.60	.75
501	511	521	1¼	.65	.85
502	512	522	1½	.70	.95
503	513	523	2	1.00	1.25
504	514	524	2½	1.60	1.80
504½	515	525	3	2.00	2.55

McDonald All Bronze Foot Valves

No. 913

Seats and discs carefully machined.

No. 913 Double Poppet

Size in.	1¼	1½	2
Each...	$4.91	6.31	8.80
Wt...lb.	3¼	3½	4¾

No. 918 Single Poppet

Size...in.	1¼	1½	2
Each....	$3.52	3.96	6.07
Wt....lb.	2½	2½	3¼

No. 918

No. 540 Clayton Mark Foot Valves

With Strainer

Made of cast iron, tapped for standard pipe thread.

Opening area is much in excess of capacity of pipe for the different sizes.

Order by number, stating size and whether painted or galvanized.

Pipe Size In.	Painted Each	Galv. Each	O.D. Valve Leather Inches	Approx. Wt. Lb. Each	Pipe Size In.	Painted Each	Galv. Each	O.D. Valve Leather Inches	Approx. Wt. Lb. Each
¾	$.80	$1.05	2½	1¾	3	$3.10	$4.25	5¾	11¼
1	.80	1.05	2½	1½	3½	5.10	7.10	7	18¾
1¼	.95	1.15	2¾	2¼	4	5.10	7.10	7	19½
1½	1.20	1.65	3	2¾	4½	8.05	11.25	9	25
2	1.65	2.00	4¼	5¼	5	8.05	11.25	9	36
2½	2.25	3.20	5	7½	6	11.40	15.65	10⅛	47

Iron Body Foot Valves

With Strainer

With Leather Disc for Cold Water

No. 2245, ¾ to 6-Inch

No. 2245, 8 to 16-Inch

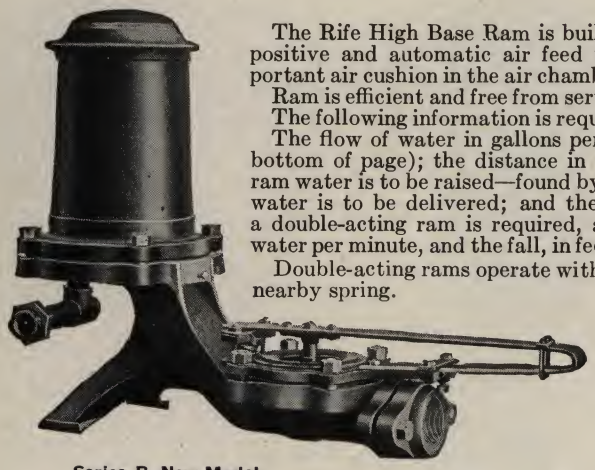
Screwed

I.P. Size Inches	Each Black	Each Galvanized	I.P. Size Inches	Each Black	Each Galvanized
¾	$1.15	$1.75	3½	$5.60	$8.50
1	1.30	2.00	4	7.30	11.00
1¼	1.40	2.10	5	11.25	16.75
1½	1.90	2.85	6	14.75	22.00
2	2.40	3.60	8	41.00	62.00
2½	3.30	5.00	10	64.00	110.00
3	3.90	5.75	12	100.00	155.00

Flanged

I.P. Size Inches	Diam. Flanges Inches	Each Black	Each Galvanized	I.P. Size Inches	Diam. Flanges Inches	Each Black	Each Galvanized
3	7½	$5.75	$9.00	10	16	$70.00	$120.00
3½	8½	7.50	12.00	12	19	112.00	170.00
4	9	9.50	15.00	14	21	150.00	.....
5	10	14.00	22.00	16	23½	200.00	.....
6	11	17.50	27.00	..	....	.....	.....
8	13½	45.00	72.00	..	....	.....	.....

Rife High Base Rams



Series B, New Model

The Rife High Base Ram is built on the high base principle embracing a positive and automatic air feed which maintains indefinitely the all-important air cushion in the air chamber.

Ram is efficient and free from service interruptions.

The following information is required to figure on a ram installation:

The flow of water in gallons per minute; the fall in feet (see diagram at bottom of page); the distance in which fall is obtained; the height above ram water is to be raised—found by the same method as the fall; the distance water is to be delivered; and the number of gallons required per day. If a double-acting ram is required, also state flow, in gallons, of the spring water per minute, and the fall, in feet, from spring to ram location.

Double-acting rams operate with creek water, and pump pure water from nearby spring.

Series A, Heavy Duty

Designed for pumping elevation up to 200 feet.

Will operate under as little as 20 inches fall.

No.	Sgl. Acting Each	Add for Dbl. Acting	Dimensions Inches Ht.	Lgth.	Width	Size Pipe Inches Drive	Delivery	G.P.M. Req. to Operate	Wt. Lbs.
10B	$40.00	$10.00	21	30	9	1¼	¾	1½– 6	92
15B	45.00	10.00	22	31	10	1½	¾	6 –12	105
20B	50.00	12.00	25	35	11	2	1	8 –18	150
25B	60.00	12.00	28	39	12	2½	1	12 –28	200
30B	70.00	15.00	30	42	13	3	1¼	20 –40	270

All bolts and steel parts are galvanized.

Designed for operating under extreme falls and very high pumping heads.

Will operate under as much as 50 feet fall and will deliver water as high as 500 feet.

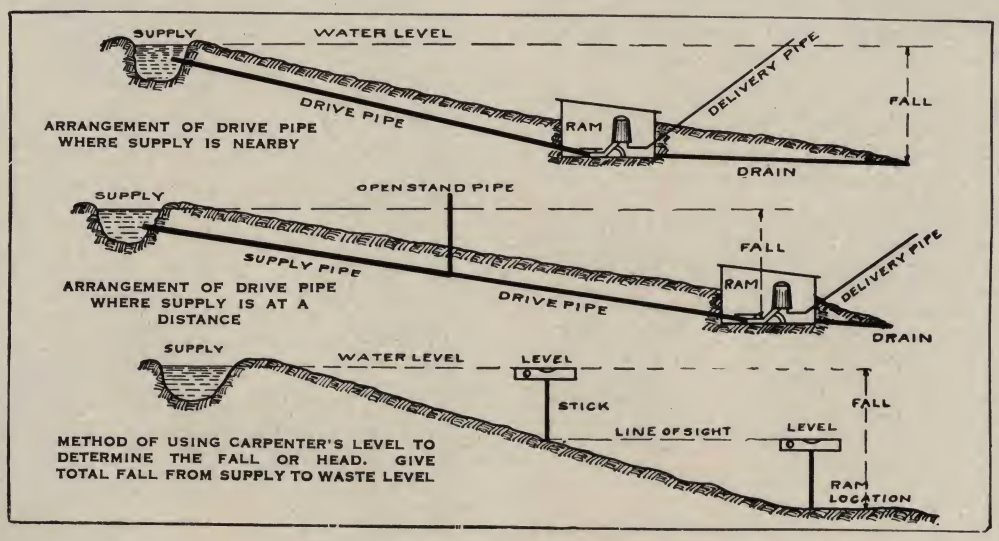
No.	Sgl. Acting Each	Add for Dbl. Acting	Dimensions Inches Ht.	Lgth.	Wdth.	Size Pipe Inches Drive	Delivery	G.P.M. Req. to Operate	Wt. Lbs.
*10A	$50.00	$10.00	26	34	12	1¼	¾	2– 6	150
*15A	55.00	10.00	26	36	12	1½	¾	6– 12	175
*20A	65.00	12.00	29	39	14	2	1	8– 18	225
*25A	75.00	12.00	29	40	15	2½	1	12– 28	250
*30A	85.00	15.00	31	43	15	3	1¼	20– 40	275
†40A	150.00	25.00	43	57	20	4	2	30– 75	600
†60C	350.00	.....	56	60	27	6	3	75–150	1200
†80C	600.00	.....	64	84	36	8	4	150–250	2200

Least number of feet fall recommended: *3; †4.

Rule for Calculating Number of Gallons of Water Delivered per Hour to Any Given Point

Multiply the number of gallons the spring or stream flows per minute by the feet in fall. Multiply this product by 40, then divide by the number of feet the water is to be elevated above the ram. The result will be the number of gallons delivered per hour.

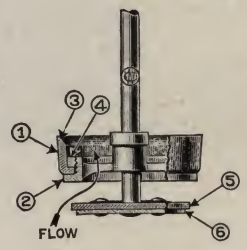
Example: Flow of Water.....18 gallons per minute
Fall of Water..... 8 feet
144
40
Elevation Above Ram in Ft. (50) 5760
115 gal. delivered per hour or 2760 gal. per day of 24 hours



Improved Navy Bilge Pumps

Brass

No. 5392 for Pipe Connection



Plunger Construction

No. 800 for Hose Connection

Capacity at a lift of 6 feet, 3 strokes per gallon.

The special high grade cup leather (1) is properly seated by the bronze ring (4) to bronze ring (2). This ring assembly, on the down or filling stroke, slides up the plunger rod to the stop collar. The flow opening is oversize to insure a full load of water without back pressure. There is a specially treated leather washer (5) on the bronze plate (6). On the up or exhaust stroke, the bronze ring and cup leather assembly make a watertight seat, so all water in the pump is lifted out and a full charge is sucked in. The cup leather with beveled edge (3) and seat ring insure a leak-proof contact and develop the utmost suction.

No		5392	800
Each		$10.00	10.00
Tapped for Pipe, Inlet	in.	1¼	...
Tapped for Pipe, Outlet	in.	1½	...
O.D. Hose Nipple, Inlet	in.	...	1½
O.D. Hose Nipple, Outlet	in.	...	1½
Overall Length	in.	23	26
Length Barrel	in.	16½	16½
Diameter Barrel	in.	2¾	2¾
Weight	lbs.	8	9

Nutmeg Portable Brass Bilge Pumps

No. 539

No. 539

Size No		1	2	4
Each		$4.25	5.00	6.25
Height	inches	16	17	26
Diameter	inches	1 1/16	1½	1½
Strokes per Quart		7	3	1½
Weight	pounds	3⅛	4½	5¾

No. 5391
With Suction Hose and Strainer

Size No		1	2
Each		$6.50	7.75
Ht.	in.	18½	21½
Dia.	in.	1 1/16	1½
Strokes	per Qt.	7	3
Wt.	lbs.	5½	7¼

No. 5391

Specialties

- It is not practical for us to list many items used for special service.
- Let us help you with problems where special material is required.

Berger Galvanized Boat Pumps

Lgth. Ft.	1½ & 2-In. Diam. Each	2½ & 3-In. Diam. Each	3½ & 4-In. Diam. Each
2	$4.75	.....	.....
3	5.00	.....	.....
4	5.50	$9.00	$10.00
5	6.00	9.50	10.70
6	6.60	10.00	11.00
7	7.00	10.60	11.50
8	7.50	11.00	12.00
9	8.00	11.50	13.00
10	9.00	12.00	14.00
12	10.00	14.00	15.00
14	.....	16.00	18.00
16	.....	18.00	20.00

This pump is regularly made in sizes of 6 feet and longer.

Smaller sizes are made to order.

Single Clapper Boat Pump Valves

Size 2½-inch furnished with leather clapper; 3-inch size and larger furnished with rubber clappers.

Size....inches	2½	3	3½	4
Per Dozen...	$4.00	4.50	5.50	6.50

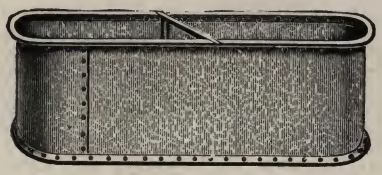
Leather Plungers

For Boat Pumps

Made of the best leather procurable.

Size...in.	2	2½	3	3½	4	4½	5
Per Doz..	$2.60	3.30	4.00	4.80	5.60	8.00	10.00
Wt. per Doz.lb.	13/16	1	1½	2	2	....	.....

Oblong Galvanized Steel Tanks



No.	Width Feet	Height Feet	Length Feet	Cap. Gals.	Weight Pounds	Price Each
RE 224	2	2	4	91	74	$12.60
RE 225	2	2	5	117	88	15.20
RE 226	2	2	6	144	102	17.70
RE 227	2	2	7	170	121	20.30
RE 228	2	2	8	197	135	22.80
RE 2210	2	2	10	250	166	27.90
RE 2258	2	2½	8	246	151	26.10
RE 2525	2½	2	5	145	93	17.00
RE 2526	2½	2	6	178	110	19.80
RE 326	3	2	6	213	124	21.80
RE 2528	2½	2	8	245	141	25.50
RE25210	2½	2	10	312	177	31.20
RE 328	3	2	8	295	156	28.10
RE 3210	3	2	10	384	185	34.40
RE 428	4	2	8	386	169	32.40
RE 4210	4	2	10	496	203	39.30
RE 4212	4	2	12	606	243	46.50
RE 4216	4	2	16	826	320	60.30
RE 5216	5	2	16	1072	375	68.40
RE 6210	6	2	10	813	262	50.40
RE 6216	6	2	16	1218	427	76.40
RE25258	2½	2½	8	305	153	29.70
RE 3258	3	2½	8	370	165	32.40
RE32510	3	2½	10	472	200	39.60
RE 4258	4	2½	8	485	180	37.10
RE42510	4	2½	10	646	226	44.90

Wood and Galvanized Steel Tanks

Wood Tanks

Round Wood Tank

Cypress is everywhere recognized as the ideal wood for tank purposes.

It is the most durable wood known and, being very straight grained, will warp and twist but little.

It also shrinks and swells less than any other woods and it will not give off any taste, odor or color.

White Pine is used almost altogether for water tanks where something cheaper than cypress is wanted, and for brine tanks in pickle works.

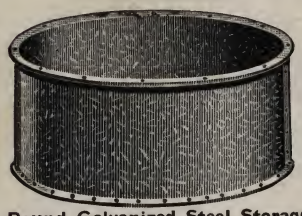
Of late years the use of yellow pine for tanks has increased to large extent, and particularly for acid tanks, stuff chests, etc., for paper mill work. While cypress gives better results for hot acids, yellow pine is superior to it for cold or warm acids. It is also extensively employed in the manufacture of the ordinary water tank.

Half-round Wood Tank

Yellow poplar, like cypress, does not impart taste, odor or color to liquids that comes into contact with it.

Poplar is very close grained and is used especially for tanks to hold medicines and other volatile liquids.

Galvanized Steel Tanks



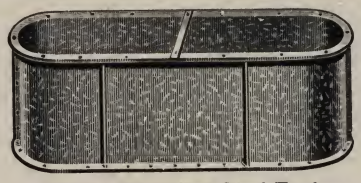
Round Galvanized Steel Storage Tank

Galvanized tanks are better than wood tanks because they have no hoops to get loose and do not leak after a long dry spell.

They are better than plain iron tanks, because they are galvanized and do not have to be painted.

Mosquitoes and wigglers do not breed in metal tanks.

Galvanized tanks do not decay, and the water never rots or spoils in them even though they are used with tight covers. They are cleaner and neater in appearance. They will last a good deal longer than wooden tanks, and cost less.



Oblong Galvanized Steel Tank

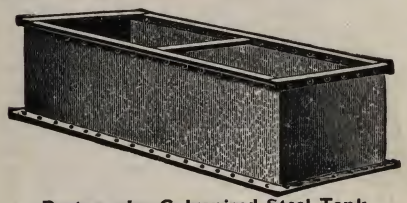
These tanks are correctly constructed.

They are made of select material and are strong and durable.

Good for underground or above ground use.

Made for all purposes.

If tanks are kept well filled with water they will last much longer than if allowed to be partly dry.



Rectangular Galvanized Steel Tank

In ordering state exactly what is wanted.

Give height and diameter or width, height and length, and state whether a round end, square or round tank is desired.

Prices and specifications upon application.

Black Steel Pneumatic Pressure Tanks

75-Pound Working Pressure—125-Pound Test

Each tank coated on outside with a preserving paint. All openings have welded threaded flanges. Furnished in either vertical or horizontal pattern.

Cap. Gal.	Each	Diam. In.	Length Ft.	Weight Lbs.	Gage Material, Inches: Shell	Convex Head	Concave Head
120	$122.00	24	5	340	3/16	1/4	1/4
140	135.00	24	6	390	3/16	1/4	1/4
180	161.00	24	8	490	3/16	1/4	1/4
240	187.00	24	10	590	3/16	1/4	1/4
220	199.00	30	6	535	3/16	1/4	5/16
295	233.00	30	8	665	3/16	1/4	5/16
365	267.00	30	10	795	3/16	1/4	5/16
315	235.00	36	6	675	3/16	1/4	5/16
420	279.00	36	8	825	3/16	1/4	5/16
525	323.00	36	10	975	3/16	1/4	5/16
630	367.00	36	12	1125	3/16	1/4	5/16
735	411.00	36	14	1275	3/16	1/4	5/16
575	417.00	42	8	1210	1/4	1/4	3/8
720	489.00	42	10	1430	1/4	1/4	3/8
865	561.00	42	12	1650	1/4	1/4	3/8
1000	633.00	42	14	1870	1/4	1/4	3/8
940	596.00	48	10	1690	1/4	1/4	3/8
1130	682.00	48	12	1945	1/4	1/4	3/8
1300	768.00	48	14	2200	1/4	1/4	3/8
1500	854.00	48	16	2455	1/4	1/4	3/8
1700	940.00	48	18	2710	1/4	1/4	3/8
1880	1026.00	48	20	2965	1/4	1/4	3/8
2260	1198.00	48	24	3475	1/4	1/4	3/8

Arrow Air Receivers

Of riveted and welded construction. Openings are so arranged to permit tank to be installed in vertical or horizontal position.

150 Pounds Working Pressure

Cap. Cu. Ft.	Black Each	Galv. Each	Size In.	Size Ft.	Approx. Wt., Lb.
4.3	.....	.....	14	4	150
7.0	.....	.....	16	5	175
11.0	.....	.....	20	5	300
16.0	.....	.....	24	5	500
24.0	.....	.....	30	5	750
29.0	.....	.....	30	6	850
42.0	.....	.....	36	6	1200

110 Pounds Working Pressure

4.3	.....	.....	14	4	120
7.0	.....	.....	18	4	150
11.0	.....	.....	20	5	225
16.0	.....	.....	24	5	385
24.0	.....	.....	30	5	550
29.0	.....	.....	30	6	625
42.0	.....	.....	36	6	950
56.0	.....	.....	36	8	1250
70.0	.....	.....	36	10	1400
77.0	.....	.....	42	8	1800
100.0	.....	.....	48	8	2100

Diameter Inches	Dimensions, Inches: Inlet and Outlet	Connection for Gauge	Drain	Safety Valve
14	1	1/4	1/2	3/4
16	1 1/4	1/4	1/2	3/4
18	1 1/2	1/4	1/2	1
20	1 1/2	1/4	1/2	1
24	2	1/4	1/2	1
30	2 1/2	1/4	1/2	1 1/4
36	2 1/2	1/4	1/2	1 1/4
42	3	1/4	1/2	1 1/2
48	3 1/2	1/4	1/2	2

Electric Weld Hydro-Pneumatic Tanks

These tanks are for 75 pounds working pressure and are tested to 150 pounds pressure.

With tapping for air control water gauge.

Capacity Gallons	Size Inches	Weight, Pounds Black	Galv.
20	14x30	53	56
42	16x48	90	94
53	18x48	103	115
82	20x60	149	163
120	24x60	200	209
220	30x72	385	420
315	36x72	498	532
530	36x120	700	745

Capacity Gallons	Each Black	Galv.
20	.....	.....
42	$15.00	$15.40
53	17.72	21.60
82	22.00	29.70
120	26.50	37.50
220	57.00	75.00
315	68.00	98.50
530	81.00	131.00

Worthington Single-Stage Air Compressor Units

Air Cooled—Horizontal Tank Mounted

For Discharge Pressures Up to 150 Pounds

Has feather valves, full automatic unloader, automatic start and stop control, Multi-V Drive, and approved motor. Check valve between compressor and air tank; enclosed crankcase, oil-tight; Timken roller bearings on ¼ to 1 hp., die cast bearings with force feed lubrication on 1½ to 5 hp.; suction muffler and air filter.

Standard steel air receiver equipped with air gauge, safety valve, drain cock and globe valve.

No.	Bore and Stroke Inches	Speed RPM.	Piston Displ. CFM.	Motor Hp.	Tank Size Inches	Tank Cap. Gal.	Space Occupied Inches Lgth.	Width	Ht.	Ship. Wt. Lb.
H-125	1⅞x2	425	1.34	¼	14x35	20	35	16	33	290
H-150	1⅞x2	850	2.7	½	16x45	36	45	16	36	371
H-175	2½x2½	580	4.1	¾	16x45	36	45	16	37	435
H-1100	2½x2½	775	5.5	1	16x45	36	45	16	37	461
H-1150	3⅛x3	600	8.0	1½	20x54	68	54	20	47	714
H-1200	3⅛x3	790	10.5	2	20x54	68	54	20	47	760
H-1300	3½x4	680	15.0	3	20x54	68	54	20	52	840
H-1500	4¼x4	760	25.0	5	20x66	84	66	24	53	1050

Type VS Worthington Vertical Single-Stage Air Compressors

Air Cooled and Water Cooled

Air Cooled

Suction and discharge valves are feather valve type.

Crank cases are provided with a combination oil gage and filling cap. The honed cylinders are replaceable.

A counter balanced crank shaft on all sizes is provided with Timken roller bearings on the Nos. S-10 and S-11 and die cast bearings on other units. Full floating type wrist pin. The Nos. S-10 and S-11 are provided with controlled splash system lubrication, while on the Nos. S-12 to W-12, a force feed pressure system is used.

The Nos. S-10 and S-11 are furnished for multi-V-drive only, while the larger units can be supplied with multi-V-drive, crowned pulley for flat belt drive, or tight and loose pulleys for drive from a lineshaft.

All sizes can be furnished with automatic start and stop control, or with constant speed pressure regulation.

Model No.	Bore and Stroke Inches	Max. Speed RPM.	Piston Displacement CFM.	*Hp.	Suction & Disc. Pipe In.	Overall Dimensions, In. Lgth.	Width	Ht.	Ship. Wt. Lb.
S-10	1⅞x2	850	2.72	.61	½	13x	9x12		65
S-11	2½x2½	850	6.0	1.33	¾	14x	10x14		85
S-12	3⅛x3	790	10.5	2.06	¾	12x	15x22		155
S-13	3½x4	790	17.4	3.7	1¼	16x	19x28		275
S-14	4¼x4	790	26.0	5.6	1¼	16x	19x28		300
W-11	4½x5	646	29.5	6.7	1½	20x	24x34		545
W-12	6½x6	575	66.3	14.7	2½	26x	31x41		1100

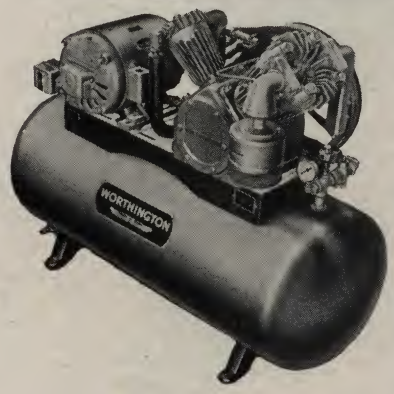
*Hp. required at 150 pounds air pressure.
Prices upon application.

Worthington Angle 2-Stage Air Compressor Units

Motor Driven—Air Cooled—Horizontal Tank

175 Pounds Discharge Pressure

For every industrial requirement where maximum reliability, efficiency, and service are desired. Used in garages, repair shops, and service stations.



Rugged, compact and carefully balanced for smooth, quiet operation.

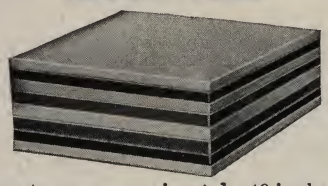
Because of its high efficiency it delivers more air per kilowatt of electricity consumed than is possible with ordinary types of compressors.

No.	Bore and Stroke Inches	Speed RPM.	Piston Displacement CFM.	Motor Hp.	Tank Cap. Gal.	Overall Length x Width x Height, In.	Ship. Wt. Lb.
H-2100	3⅛/1⅞x2	540	4.8	1	36	45x20x36	570
H-2150	3⅛/1⅞x2	755	6.7	1½	68	54x22x40	713
H-2200	4¼/2½x2¾	405	9.0	2	68	54x23x42½	915
HO-2200	4¼/2½x2¾	405	9.0	2	84	36x23x42½	940
H-2300	4¼/2½x2¾	580	13.0	3	68	54x23x42½	930
HO-2300	4¼/2½x2¾	580	13.0	3	84	66x23x42½	955
H-2500	5½/3⅛x3½	520	25.0	5	84	66x30x50	1315
H-2750	6½/3½x4	485	37.0	7½	84	66x26x57	1564
HO-2750	6½/3½x4	485	37.0	7½	140	72x30x62	1650
H-21000	6½/3½x4	610	47.0	10	84	66x26x57	1646
HO-21000	6½/3½x4	610	47.0	10	140	72x30x62	1700
H-21500	6½/3½x4	870	67.0	15	140	72x30x60	1755

Prices and complete information upon request.

Wilmington Vulcanized Fiber Sheets

Hard and Flexible



Standard sheets are approximately 46 inches wide and 76 inches long. Made in red, gray and black.

Thickness Inches	Per Pound	Thickness Inches	Per Pound	Thickness Inches	Per Pound
.004	$.55	3/4	$.66	1 1/2	$1.30
.005–1/8	.50	7/8	.70	1 5/8	1.50
3/16–5/16	.51	1	.76	1 3/4	1.80
3/8–7/16	.53	1 1/8	.86	1 7/8	2.20
1/2	.56	1 1/4	1.00	2	2.60
5/8	.60	1 3/8	1.15	...	....

Approximate Weights of Vulcanized Fibre Sheets

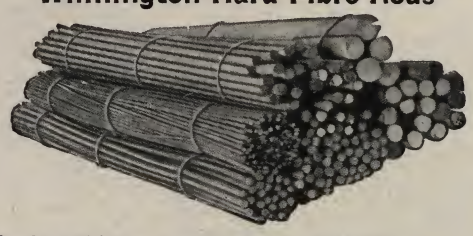
Sheets About 44x72 Inches

Thickness Inches	Weight Pounds	Thickness Inches	Weight Pounds
1/64	2 1/2	7/16	70
1/32	5	1/2	80
3/64	7 1/2	9/16	90
1/16	10	5/8	100
3/32	15	3/4	120
1/8	20	7/8	140
3/16	30	1	160
1/4	40	1 1/8	180
5/16	50	1 1/4	200
3/8	60	1 1/2	240

A square foot of 1-inch thick fibre weighs about 7 pounds. Specific gravity about 1.38.

There are 20 cubic inches to a pound.

Wilmington Hard Fibre Rods



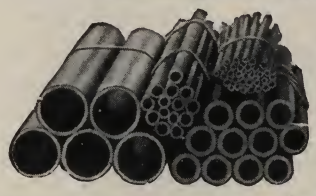
Lengths about 60 inches; 3 colors, red, gray and black.

Diam. In.	Ft. per Lb.	Per Foot: 9 Ft. or Less	10 to 24 Ft.	25 to 49 Ft.	50 to 99 Ft.	100 to 499 Ft.	500 to 999 Ft.
3/32	241	$.17	$.14	$.11	$.09	$.08	$.07
1/8	136	.17	.14	.11	.09	.08	.07
3/16	60	.17	.14	.11	.09	.08	.07
1/4	34	.18	.15	.12	.10	.09	.08
5/16	22	.20	.16	.13	.11	.10	.09
3/8	15	.22	.18	.15	.13	.12	.11
7/16	11	.27	.23	.20	.18	.16	.14
1/2	8.5	.33	.28	.22	.20	.18	.17
9/16	6.7	.40	.33	.27	.22	.20	...
5/8	5.4	.47	.40	.33	.28	.24	...
11/16	4.5	.56	.47	.39	.34	.29	...
3/4	3.8	.68	.57	.45	.38	.35	...
13/16	3.2	.80	.65	.51	.42	...	...
7/8	2.8	.94	.74	.57	.49	...	...
15/16	2.4	1.10	.84	.68	.58	...	...
1	2.1	1.30	1.00	.80	.68	...	...
1 1/8	1.7	1.60	1.15	.95	...	...	...
1 1/4	1.4	2.00	1.50	1.20	...	...	...
1 3/8	1.1	2.40	1.90	1.65	...	...	...
1 1/2	.94	2.80	2.55	2.30	...	...	...
1 5/8	.80	3.50	3.00	...	...	...	...
1 3/4	.69	4.50	4.00	....	...	...	...
1 7/8	.60	6.50	5.50	....	...	...	...
2	.53	8.50	7.50	....	...	...	...

Intermediate sizes at next higher price except sizes not more than .015 inch oversize take price of standard size. Different sizes may be aggregated.

Feet per pound will vary with the grade of fibre.

Wilmington Hard Fibre Tubing



This fibre tubing is extra tough and is a good insulator of electricity. Takes a satisfactory thread. Various parts are machined from it, such as fuse casings, flash-light casings, wire conduits, bushings, roller covers and a variety of screw machine products. Length of tubes from 2 to 3 feet.

I. D. In.	Per Foot — Thickness of Wall, Inches: 1/16	3/32	1/8	5/32	3/16	7/32	1/4	9/32	5/16
1/8	$.25	$.30	$.40	....	....	....	....	....	....
3/16	.20	.25	.35	....	....	....	....	....	....
7/32	.16	.20	.30	....	....	....	....	....	....
1/4	.12	.14	.18	$.22	$.26	....	....	....	....
5/16	.13	.15	.19	.24	.28	....	....	....	....
3/8	.14	.16	.21	.26	.31	....	....	....	....
7/16	.15	.17	.22	.28	.33	....	....	....	....
1/2	.16	.18	.24	.30	.36	$.42	$.48	....	....
9/16	.17	.20	.26	.32	.39	.46	.52	....	....
5/8	.18	.21	.28	.35	.42	.49	.56	....	....
11/16	.20	.23	.30	.37	.45	.52	.60	....	....
3/4	.21	.24	.32	.40	.48	.56	.64	....	....
13/16	.22	.26	.34	.42	.51	.60	.68	....	....
7/8	.23	.27	.36	.45	.54	.63	.72	....	....
15/16	.24	.29	.38	.47	.57	.66	.76	....	....
1	.25	.30	.40	.50	.60	.70	.80	....	...
1 1/8	.27	.33	.44	.55	.66	.77	.88	....	....
1 1/4	.29	.36	.48	.60	.72	.84	.96	....	....
1 3/8	.30	.39	.52	.65	.78	.91	1.04	....	....
1 1/2	.32	.42	.56	.70	.84	.98	1.12	....	....
1 5/8	.35	.45	.60	.75	.90	1.05	1.20	....	....
1 3/4	.36	.48	.64	.80	.96	1.12	1.28	....	....
1 7/8	.39	.51	.68	.85	1.02	1.19	1.36	....	....
2	.41	.54	.72	.90	1.08	1.26	1.44	$1.62	$1.80
2 1/8	.44	.57	.76	.95	1.14	1.33	1.52	1.71	1.90
2 1/4	.46	.60	.80	1.00	1.20	1.40	1.60	1.80	2.00
2 3/8	.47	.63	.84	1.05	1.26	1.47	1.68	1.89	2.10
2 1/2	.49	.66	.88	1.10	1.32	1.54	1.76	1.98	2.20
2 5/8	.52	.69	.92	1.15	1.38	1.61	1.84	2.07	2.30
2 3/4	.55	.72	.96	1.20	1.44	1.68	1.92	2.16	2.40
2 7/8	.57	.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50
3	.60	.78	1.04	1.30	1.56	1.82	2.08	2.34	2.60

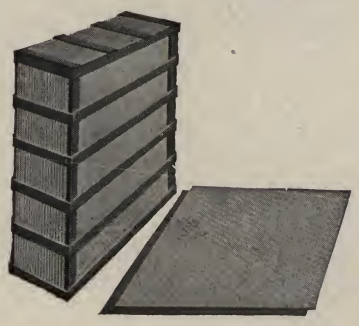
Intermediate sizes take price of next larger diameter and next thicker wall.

Different sizes may be aggregated.

Tubes cut to exact lengths, prices upon application.

Rectangular tubes take double the list price of round.

Asbestos Millboard



Made of pure asbestos fibre. Acid proof and fire proof.

Standard size sheet, 42x48 inches.

In crate lots.

Thickness In.	Per Lb.	Approx. Wt. Lb. Per Sheet	Per Sq. Ft.
1/16	...	4.6	.33
1/8	...	9.0	.64
3/16	...	13.3	.95
1/4	...	17.6	1.26
3/8	...	25.2	1.81
1/2	...	31.5	2.25

Cold Water Paste

Convenient and practical. Put up in small bags or kegs and barrels.

Cheaper than other forms of paste. Can be mixed with either hot or cold water.

5-Pound Bags.....per pound ....
50-Pound Kegs.....per pound ....
200-Pound Barrels.....per pound ....

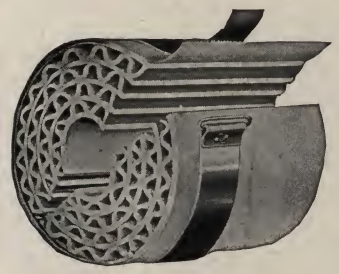
85% Magnesia Pipe Covering

For high pressure steam lines boiler and locomotive lagging. Carbonate of magnesia is fire-proof and a non-conductor of heat. Asbestos fiber is light and almost indestructible; it also has a high heat insulation value.

Made in sections 3 feet long. Standard thickness, 1 inch. Finished with canvas jacket and standard lacquered metal bands. Made to fit all standard pipe sizes.

Sold from regular section pipe covering lists.

Asbestos Aircell Pipe Covering



This pipe covering is the standard for low pressure steam and hot water pipes.

It is made up of alternate layers of plain and corrugated asbestos paper. Sal-Mo asbestos paper is used in the manufacturing of this covering.

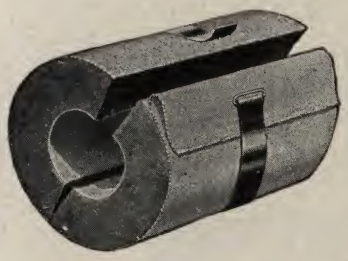
Pipe covering is firm and uniform in section. It is light, fire-proof and durable.

Made in sections 3 feet long. Thickness ½, ¾ and 1 inch. Finished with canvas jacket and brass lacquered metal bands. Made to fit all standard pipe sizes.

Sold from regular sectional pipe covering lists.

Carey Perfecto Wool Felt Sectional Pipe Covering

For Cold Water Pipes



Composed of laminated wool felt with an inner lining of waterproof asbestos paper for insulating cold service water pipes and to prevent sweating and retard freezing.

Can also be used on hot water lines.

Finished with cotton cloth jacket, complete with bands.

Furnished in 3-foot long sections, in standard thickness of ½, ¾, and 1-inch for insulation, and double ½-inch to prevent sweating. Sold from pipe covering list.

Pipe Covering Bands

All pipe covering bands are ¾ inch wide.

Size Pipe In.	Wall Thickness Pipe Covering, In. ½	¾	1	Size Pipe In.	Wall Thickness Pipe Covering, In. ½	¾	1
	Lgth. of Band Required — Inches				Lgth. of Band Required — Inches		
½	9	11	11	4	20	22	23
¾	9	11	12	4½	22	23	25
1	11	11	13	5	23	25	26
1¼	11	12	14	6	26	28	29
1½	12	13	15	7	29	31	33
2	14	15	18	8	33	34	36
2½	15	18	18	9	36	37	39
3	16	18	20	10	39	41	42
3½	18	20	22	12	45	47	49

Prices upon application.

Sectional Pipe Insulation

Supplied in sections 3 feet long, canvased; with brass lacquered bands.

Use standard thickness prices for thicknesses 1 inch and under.

Per Linear Foot

I.D. Pipe Inches	Standard Thickness	†Double Standard Thickness	1½-Inch Thickness	2-Inch Thickness	2½-Inch Thickness	3-Inch Thickness, Broken Joint
½	$.22	$.65	$.46	$.75	$1.00	$1.20
¾	.24	.70	.49	.80	1.05	1.35
1	.27	.75	.52	.85	1.10	1.40
1¼	.30	.80	.56	.90	1.15	1.45
1½	.32	.85	.60	.95	1.20	1.55
2	.36	.90	.64	1.00	1.25	1.65
2½	.40	1.00	.70	1.05	1.35	1.75
3	.45	1.10	.76	1.15	1.50	1.90
3½	.50	1.20	.82	1.25	1.65	2.05
4	.60	1.40	.88	1.35	1.80	2.20
4½	.65	1.50	.94	1.45	1.95	2.35
5	.70	1.60	1.00	1.55	2.10	2.50
6	.80	1.80	1.10	1.70	2.25	2.70
7	1.00	2.25	1.20	1.85	2.40	2.90
8	1.10	2.50	1.35	2.00	2.55	3.15
9	1.20	2.70	1.50	2.20	2.80	3.40
10	1.30	2.90	1.65	2.40	3.05	3.65
*12	1.85	4.10	1.85	2.70	3.40	4.10
14 O.D.	2.10	4.60	2.10	3.00	3.80	4.60
16 O.D.	2.35	5.10	2.35	3.30	4.20	5.10
18 O.D.	2.60	5.60	2.60	3.60	4.60	5.60
20 O.D.	2.85	6.00	2.85	4.00	5.00	6.00
24 O.D.	3.30	7.00	3.30	4.50	5.75	7.00
30 O.D.	4.00	8.40	4.00	5.50	6.95	8.40

*Sizes 12-inch and larger furnished in segmental form. 12-inch can be supplied in sectional type on special order.

†Only 85% Magnesia made in this thickness.

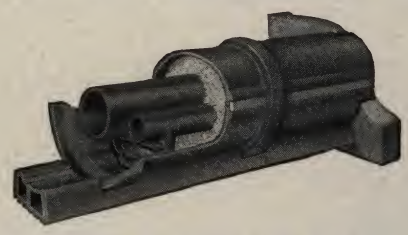
Sheet and Block Insulation

Standard List

Thickness In.	Per Sq. Ft.	Thickness In.	Per Sq. Ft.	Thickness In.	Per Sq. Ft.	Thickness In.	Per Sq. Ft.	Thickness In.	Per Sq. Ft.
½	$.27	1¼	$.38	1⅞	$.57	2½	$.75	3¼	$.98
¾	.27	1⅜	.42	2	.60	2⅝	.79	3½	1.05
⅞	.27	1½	.45	2⅛	.64	2¾	.83	4	1.20
1	.30	1⅝	.49	2¼	.68	2⅞	.87	...	....
1⅛	.34	1¾	.53	2⅜	.72	3	.90	...	....

Adsco-Bannon Tile Conduit

For Underground Steam and Hot Water Lines

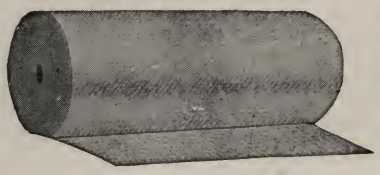


Combines strength, durability, and simplicity of installation in reasonably priced tile conduit, with or without base drain for underground steam or hot water lines. Scored deeply for easy splitting into halves on the job. Pipe supports fit securely into recesses in the reinforcing ribs of tile support sections without piercing conduit wall.

Available promptly from stock in 2 ft. bell and spigot sections in sizes from 4″ to 24″ to accommodate one or more bare or insulated pipes including necessary pipe supports, bars and rollers. Sectional asbestos or filler insulation may be used within the conduit as required. Adsco Cast Iron Conduit also available for reinforcing lines under roadways, railroads, etc. subject to heavy traffic conditions.

Submit details of installation including length of line size of one or more bare or insulated pipes, insulation to be used, pressure and temperature for prompt quotation.

Asbestos Paper



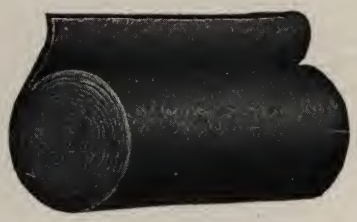
This paper is fire-stop, protecting floors, walls and ceilings, insulating electrical apparatus, lining ovens and gas ranges.

In rolls,
Width.....in. 18 36
Approx. wt... lb..... 50 100

Wt., Lb. per 100 Sq. Ft.	Thickness Inches	Sq. Ft. per 100 Pounds	Wt., Lb. per 100 Sq. Ft.	Thickness Inches	Sq. Ft. per 100 Pounds
6	0.012 to 0.015	1670	16	1/32	625
8	0.016 " 0.019	1250	32	1/16	313
10	0.020 " 0.022	1000	48 (Heavy)	3/32	208
12	0.024 " 0.027	833	64 "	1/8	156
14	0.028 " 0.029	715	..	..	...

Per Pound..... ....

Hair Felt



Used for refrigerator insulation and for insulating hot and cold water pipes.

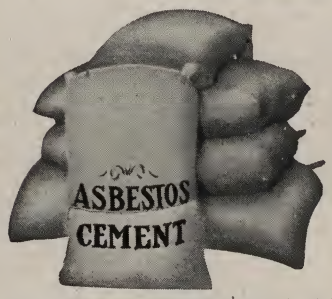
Made of cattle hair, carefully selected and chemically cleaned.

Bales 6 feet wide contain 300 square feet; bales 3 feet wide, 150 square feet.

Extra charge for cutting less than 300 square feet.

Thickness.....inches	1/4	1/2	3/4	1	1 1/4	1 1/2	2
Per Square Foot.....	...	...	...	...	...	...	...
Wt. per Sq. Ft....oz.	4	6 1/4	8 1/2	11	13 1/2	16	21

Asbestos Cement



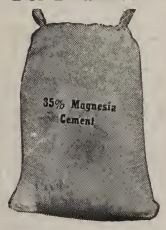
For covering boilers, drums, heaters and breechings.

Made of asbestos fiber and other high grade, fire-proof, insulating materials. Makes a durable and efficient covering.

Readily applied over irregular surfaces making a neat effective insulation. The cement is dry need only be mixed with cold water to the consistency of mortar and applied with a trowel.

Made in 3 grades: 100X, Standard and Peerless. Put up in 100-pound bags; 100 pounds of 100X will cover approximately 25 square feet one inch thick.

Per Pound..... .....



85% Magnesia Cement

For Temperatures to 600°F

An insulating cement for use in connection with 85% Magnesia insulation.

For use in power plants wherever a high grade plastic insulation is required.

Covering capacity, about 35 square feet per bag, 1-inch thick.

In 60-pound bags.

Prices upon application.

No. 3 Armstrong Coarse Regranulated Cork

Regranulated cork is used to fill in irregular spaces which are not easily insulated with corkboard or cork covering.

Shipped in large bags.

Weight per cubic foot, 4 1/2 pounds.

No. 3.....per 100 pound bag ....

Schundler Insulating Cements

Vermiculite

No. 150. A vermiculite base cement having exceptionally high insulating efficiency, good adhesion and workability. Extra low shrinkage. Approximate coverage, 40 pounds, 1-inch thick applied and dried, 32 square feet. Temperature limit, 1800°F. Re-usable temperature, 1500°F. Put up in 40-pound paper bags.

No. 200. For flat surfaces such as boilers, tanks, furnaces, breechings, etc. Made from a vermiculite base comibned with black mineral wool. High insulating value, good adhesion, low shrinkage, fair plasticity. Approximate coverage, 50 pounds, 1-inch thick applied and dried, 37 square feet. Temperature limit, 1800°F. Re-usable temperature, 1500°F. Put up in 50-pound paper bags.

No. 400. A high quality finishing cement for putting a smooth finish over insulating blocks, flat surfaces and fittings. Also for sealing cracks, joints, etc. High insulation value. Excellent adhesion to any clean surface. Low shrinkage. Workable in an unusual degree. Approximate coverage, 50 pounds, 1-inch thick applied and dried, 17 square feet. Temperature limit, 1000°F. Put up in 50-pound paper bags.

Mineral Wool

No. 300. For fittings and wherever a high grade insulating cement is desired. Made from a black mineral wool base. High insulating value. Excellent adhesion to hot or cold surfaces. Will not crack. Very plastic. Excellent workability. Approximate coverage, 50 pounds, 1-inch thick applied and dried, 25 square feet. Temperature limit, 1800°F. Re-usable temperature, 1200°F. Put up in 50-pound paper bags.

No. 325. Made from a black mineral wool base with a small amount of finely ground vermiculite. Excellent workability. Good adhesion. Will not crack. Approximate coverage, 50 pounds, 1-inch thick applied and dried, 25 square feet. Temperature limit, 1800°F. Re-usable temperature, 1200°F. Put up in 50-pound paper bags.

No. 350. Made from a white rock wool base with a small amount of finely ground vermiculite. Excellent workability. Good adhesion. Will not crack. Not recommended for extremely high temperatures. Approximate coverage, 50 pounds, 1-inch thick applied and dried, 25 square feet. Temperature limit, 1500°F. Re-usable temperature, 1200°F. Put up in 50-pound paper bags.

Rock Wool

This is a fibrous mineral used extensively as a heat retardant and sound deadener in walls, floors, partitions, etc, it is fire and vermin-proof. Furnished in bags containing approximately 35 pounds each. When lightly installed, it should weigh approximately 7 pounds per cubic foot.

Per Pound..... ....

Fire Clay

When fire clay is used for laying brick, it is recommended that the same clay be used as that from which the brick is made.

Available in bulk in quantities and 100-pound bags.

Per 100-Pound Bag.....each .....

Bulk prices upon application.

Plibrico Refractory Products

A Typical Monolithic Plibrico Lining in Connection with Stoker-fired H.R.T. Boiler. The Strength of This One-Piece Lining is Apparent at a Glance

Plibrico Jointless Firebrick

Plibrico is a refractory material in plastic, semibaked form, the consistency of stiff putty. It is used in place of ordinary fire brick for lining boiler furnaces, incinerators, ovens, etc. Plibrico is not installed as a coating over an old fire brick lining but entirely replaces the old lining, being installed next to the outer brick after the old fire brick has been removed.

Plibrico lasts long and gives economical service. May be used for patching, grate line repairs, door arches, burner rings, etc., as well as for complete linings and new settings.

How Installed.—Plibrico is installed in moist, plastic form with a steel hammer or air rammer. No forms are necessary since the material is self supporting. After being solidly pounded into place, it is trimmed with a trowel or other sharp instrument, then baked out by the fire, forming a solid, monolithic lining. There are no joints to open up or individual brick to loosen and bulge.

Monolithic Plibrico linings are anchored to the outer brickwork by patented Flexo-Anchors. These anchors allow the wall to expand and contract but prevent it from bulging. When a Plibrico lining requires repairs along the grate line or elsewhere, these anchors hold the balance of the lining safely in position while the affected area is cleaned out for replacement.

Plibrico sectionally-supported, air-cooled walls can be used for severe service where excessive maintenance is encountered. These walls are installed at minimum expense in connection with both new and existing boilers. They reduce furnace maintenance expense, cut heat losses through the setting, and provide preheated air for combustion. For battery settings, the Plibrico air-cooled center wall, which can be installed at moderate cost, will eliminate the center wall problem which has proved annoying in many plants.

Plibrico Suspended Construction is likewise used for building or replacing suspended arches. It can be supported from existing hangers even if warped or burned.

Complete installation and boiler setting service furnished. Blueprints showing the application of Plibrico construction for complete linings, air-cooled walls, or new settings may be obtained.

Packed in air-tight cartons weighing 100 pounds net and containing ¾ cubic feet. Factory-sliced into six 2-inch slabs.

Weight per cubic foot, 133⅓ pounds.

Plibrico Super

For extreme combustion conditions, particularly where fuel exerts a corrosive effect on refractory lining.

Packed in 100-pound cartons.

Weight per cubic foot, 133⅓ pounds.

Plicast Castable Material

Plicast is highest quality self-hardening or "castable" refractory material in dry, powdered form. Sets without heat after being mixed with water.

Made in four types: Plicast No. 27 for high-temperature applications, special shapes, burner blocks, incinerator and industrial furnace linings, etc. Plicast No. 15 for lower temperatures, rear arches, ash pit rear boiler passes, etc. Plicast Baffle-Mix for patching and repairing monolithic baffles. Plicast Hearth Cement for setting stokers and oil burners.

Packed in 100-pound bags.

Weight per cubic foot, 110 pounds.

Burner-Set

A refractory concrete for setting stokers and constructing oil burner combustion chambers. For domestic installations operating at moderate temperatures.

Packed in 100-pound bags.

Weight per cubic foot, 110 pounds.

Hyrate Refractory Cement

A heat-setting, high-temperature cement in dry, powdered form that is recommended for extreme combustion conditions. This cement mixes easily and spreads readily as a result of its fine, even texture.

Packed in 100-pound moisture-proof bags. Each bag sufficient to lay about 250 fire brick.

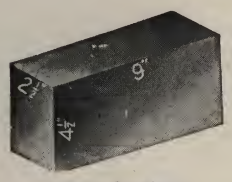
Demon Air-Set Cement

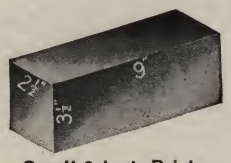
A high-temperature cement ready to use in moist, plastic form. Sets cold upon exposure to atmosphere, forming an exceptionally strong bond.

Packed in 50-pound pails, 100, 200, and 500-pound drums; 100 pounds sufficient to lay 200 to 250 fire brick.

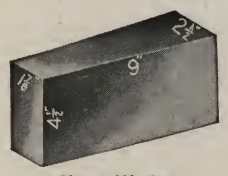
Prices upon Request

Fire Brick—9-inch Shapes


9-inch Straight
9x4½x2½ Inches

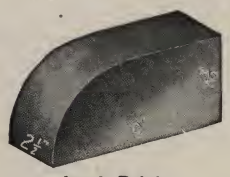

Small 9-inch Brick
9x3½x2½ Inches

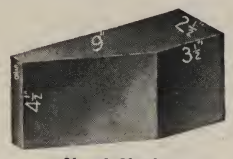
Checker
9x2¾x2¾ Inches

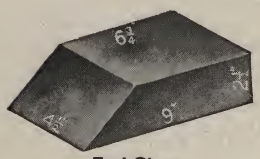

No. 1 Wedge
9x4½x(2½-1⅞) Inches

No. 1 Key
9x(4½-4)x2½ Inches

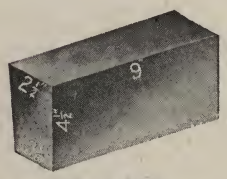
No. 2 Key
9x(4½-3½)x2½ Inches

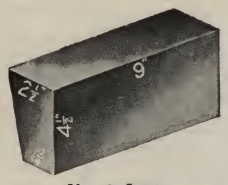

Jamb Brick
9x4½x2½ Inches


No. 1 Neck
9x4½x3½x2½x⅝ Inches


End Skew
(9-6¾)x4½x2½ Inches

Side Skew
9x(4½-2¼)x2½ Inches

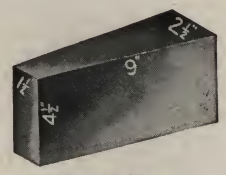

No. 1 Arch
9x4½x(2½-2⅛) Inches


No. 2 Arch
9x4½x(2½-1¾) Inches

Split Brick
9x4½x1¼ Inches

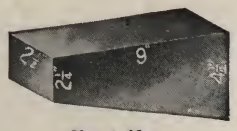
Soap
9x2¼x2½ Inches

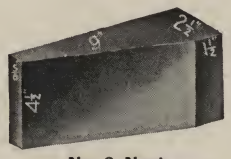
Fire Brick—9-inch Shapes

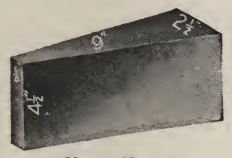

No. 2 Wedge
9x4½x(2½-1½) Inches

2-Inch Brick
9x4½x2 Inches

No. 3 Key
9x(4½-3)x2½ Inches

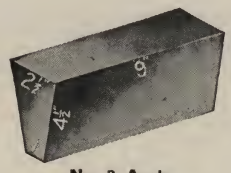

No. 4 Key
9x(4½-2¼)x2½ Inches

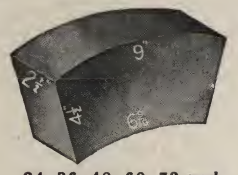

No. 2 Neck
9x4½x2½x1½x⅝ Inches


No. 3 Neck
9x4½x(2½-⅝) Inches

Edge Skew
9x(4½-1½)x2½ Inches

Feather Edge
9x4½x(2½-⅛) Inches


No. 3 Arch
9x4½x(2½-1) Inches


24, 36, 48, 60, 72 and 84-Inch Circle Brick

24-inch Circle Brick.—24-inch inside diameter, 12 to a circle, (9—)x4½x2½ inches.

36-inch Circle Brick.—36-inch inside diameter, 16 to a circle, (9—)x4½x2½ inches.

48-inch Circle Brick.—48-inch inside diameter, 20 to a circle, (9—)x4½x2½ inches.

60-inch Circle Brick.—60-inch inside diameter, 24 to a circle, (9—)x4½x2½ inches.

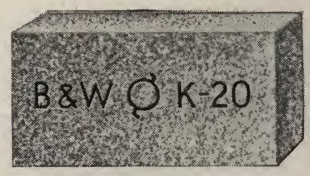
72-inch Circle Brick.—72-inch inside diameter, 28 to a circle, (9—)x4½x2½ inches.

84-inch Circle Brick.—84-inch inside diameter, 32 to a circle, (9—)x4½x2½ inches.

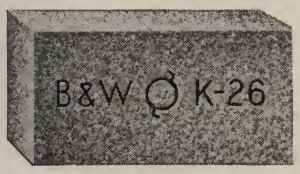
They cost no more than the 9-inch Straights, save a lot of the brick mason's time and actually give better fire brick construction. When ordering give name of the shape (dimensions, too, if convenient) and state brand or quality needed.

Prices upon application.

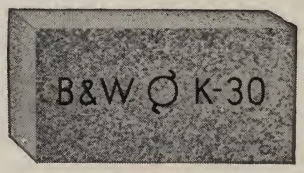
B&W Insulating Firebrick



No. K-20



No. K-26



No. K-30

B & W Insulating Firebrick has the low heat-conductivity of efficient insulation plus the ability to withstand direct exposure to furnace heat.

Replaces to a large extent the combination of dense firebrick and unfired insulating materials formerly used in the construction of industrial furnaces and kilns. Also used for lining fireboxes of oil burning heating boxes and furnaces.

Light, porous structure assures high insulating value and low thermal-capacity or heat storage. Due to low heat-storage capacity the time required to heat up the furnace is shortened as much as 80 per cent. Close temperature control and uniform heat is provided. Hot-face temperature responds quickly to changes in the rate of heat input to the furnace.

The use of thinner walls of insulating firebrick in place of thicker walls of dense brick and insulation provides greater hearth area, further increasing furnace output. For this reason also, a furnace of a given capacity can be built to occupy less floor space.

Due to light weight, less steel work is required for supporting the thin, lightweight walls and arches, and lighter foundations are required for supporting the furnace. Also, lighter buck-stays may be used for taking the thrust from sprung arches.

To select the most economical insulating firebrick it is only necessary to determine which brick is suitable on the basis of its service-temperature rating. This brick will have the lowest weight and the lowest heat losses. The brick thus chosen will also have more than sufficient load-bearing capacity to meet the requirements of any simple furnace-wall and will have superior strength for other applications where hot-load strength is most important such as in wide-span arches with high internal pressures.

High strength is hot-load strength—not cold crushing strength, which is of no practical value since it is available only in a cold furnace.

No.	K-20	K-26	K-30
Service Temperature:			
Exposed.....degrees F.	2000	2600	2900
Backing Up.....degrees F.	2000	2600	2900
Fusion Point.....degrees F.	2750	3000	3190
Conductivity at Mean Temperature of:			
500°F.	.82	1.21	1.95
1000°F.	1.10	1.90	2.53
1500°F.	1.40	2.74	3.28
2000°F.	....	3.62	4.10
Hot Load Strength:			
Percentage Deformation under 10 Lb. per Sq. In. Load, 1½ Hr. at Temp. Indicated:			
1600°F.	....	....	....
2000°F.	.1	....	....
2300°F.	....	1.4	.3
Average Cold Crushing Strength per Square Inch.....pounds	110	140	250
Average Modulus of Rupture per Square Inch.....pounds	80	150	250
Average Weight per Cubic Foot...lb.	27.4	38.5	51.3
Average Wt. per 9 In. Straight....lb.	1.60	2.25	3.0

Fire Brick

Robinson Brand

A fine quality brick, made from a combination of the most refractory plastic and flint clays procurable. A superior refractory for stoker, pulverized coal and fuel oil burning equipment.

Has excellent resistance to sudden changes of temperature and spalling. Withstands heavy loads at high temperatures. Low coefficient of expansion.

Made by the dry press process, in all standard series of shapes. Size, 9x4½x2½ inches.

No. 1 Savage

Well adapted to moderate heat duty installations. Mechanically strong, with low absorption and low shrinkage. Resists slag and abrasion, and gives excellent service for boiler settings, friction zone of lime kilns, annealing furnaces, etc.

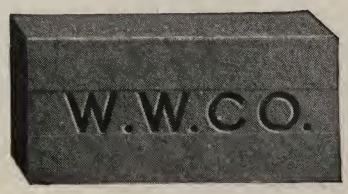
Made by the dry press process. Size, 9x4½x2½ inches. Also furnished in the large 9-inch, flat backs and 13½-inch series of shapes.

Ohio Woodland

Suitable for long, hard service. It will carry load under high temperature, being burned hard enough to prevent shrinkage. It will also resist spalling and abrasion. Widely used in boiler furnaces, as well as forging, annealing and heating furnaces, regenerators, etc.

Made from carefully selected flint and plastic clays, by the dry press process, in all standard series of shapes. Size, 9x4½x2½ inches.

W.W. Co.



Used for light heat service and for back-up purposes, brick kilns, hand-fired boilers, incinerators, stack lining, etc. Has a high fusion point.

Size, 9x4½x2½ inches.

Prices on request.

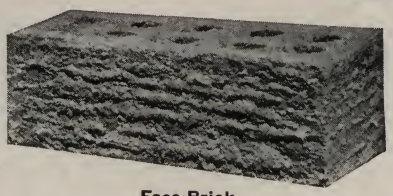
Robinson Patch-tite Plastic Fire Brick

A tough, durable, high quality, plastic fire brick that is readily rammed or pounded into place in the furnace structure to replace burned out masonry linings or to form monolithic walls and arches.

The use of Patch-tite saves time, labor, and the expense of rebuilding an entire furnace wall, and provides a simple and inexpensive method of building monolithic linings for the highest service temperatures.

In 100-Pound Cartons.....per pound ....

Muirkirk Reds
Face and Common Bricks

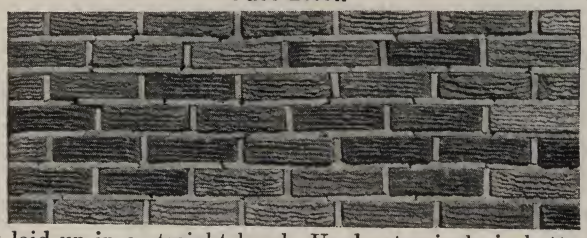


Face Brick

Common Brick

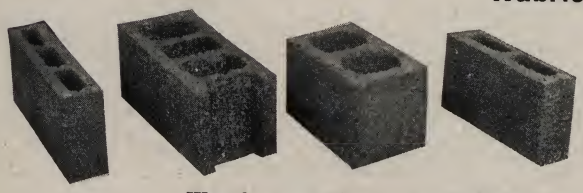
A high quality, hard burned, clay brick with low water absorption.

Face Brick



Attractive Shag Bark laid up in a straight bond. Used extensively in better homes and buildings.

Wabrico Cinder Blocks



A high quality, smooth grained, smooth finished, well bonded cinder block that can be used for both exterior and interior wall construction.

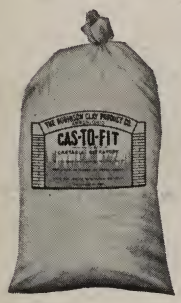
Hollow			Solid
Size, Inches	Size, Inches	Size, Inches	Size, Inches
12x8x16	8x8x18	6x8x12	8x8x16
8x8x16	4x8x18	8x8x12	8x8x12
4x8x16	12x8x12	4x8x12	4x8x16
.....	.....	.....	4x8x12

We also manufacture and distribute a full line of masonry materials consisting of such items as:

Free State Brick Mortar
Hollow Building Tile
Salt and Ceramic Glazed Tile
Paving Brick
Glazed Brick
Speed Brick

Prices Upon Application

Robinson Cas-To-Fit Castable Refractory



A hydraulic castable refractory which offers a wide range of profitable applications in industrial, domestic heating, and power boiler furnaces. It is ideal for making special shapes in the plant, and for monolithic baffles.

Prepared for use by the addition of water.

Is readily moulded, sets without heat, and possesses unusual hardness and strength in service.

Per Pound..... ....

Robinson Royal High Temperature Mortar

Royal High Temperature Mortar is heat setting and is used for laying fire brick in furnaces operating at extreme temperatures.

This mortar allows for expansion and contraction of each fire brick as a unit.

In 100-pound waterproof bags.

Per Pound..... ....

Robinson Crown Dry High Temperature Bonding Mortar

An air setting cement which provides a strong bond between fire brick. Forms a hard, impervious joint at atmospheric to operating furnace temperatures.

It is shipped dry and requires only a thorough mixing with water to make it ready for use.

In 100-pound waterproof bags.

Per Pound..... ....

Robinson Crown Plastic High Temperature Bonding Mortar

This air setting mortar provides a strong bond between fire brick, and forms a hard, impervious joint at atmospheric to operating furnace temperatures.

A wash or brush coating of Crown Plastic Mortar prevents penetration of foreign elements that cause disintegration and spalling.

Put up in 100 and 200-pound airtight metal containers.

Parral Plastic Bonding Mortar

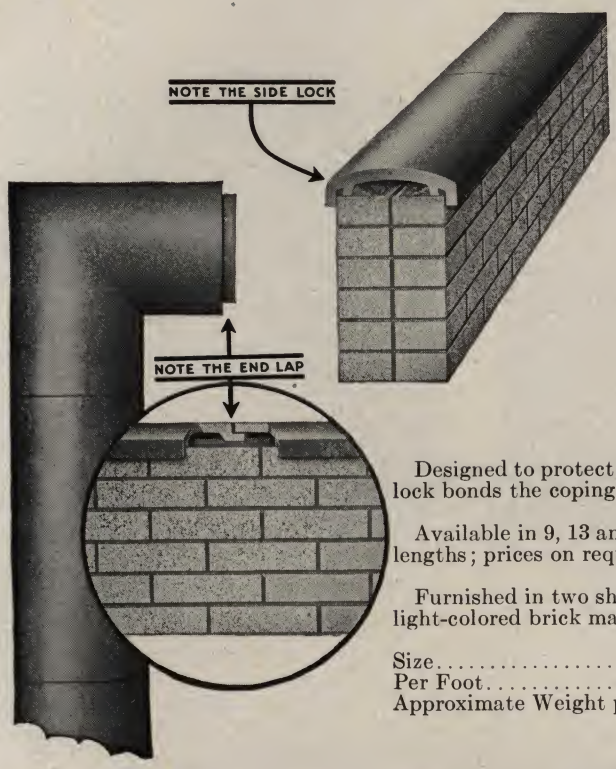
A ready mixed, plastic air-setting mortar, used as a bond between fire brick producing strong adhesion.

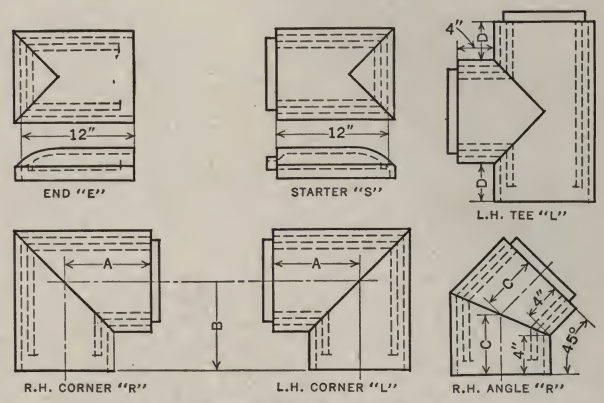
Sets quickly and is especially adapted as a joining material for fire brick in domestic oil burner installations.

Put up in 25 and 50-pound drums.

Per Pound..... ....

Lap-Lok Wall Coping





Types of Fittings Available

Designed to protect the mortar joint against the elements; no exposed joints. The side lock bonds the coping to the wall.

Available in 9, 13 and 18-inch sizes, in 24-inch lengths. Also available in 6 and 12-inch lengths; prices on request.

Furnished in two shades of brown; also in a buff color (unglazed) to match stone and light-colored brick masonry.

Size.....inches	9	13	18
Per Foot.....	$.40	.60	1.20
Approximate Weight per Foot.....pounds	10	15	30

Wall Coping

Camel Back and Single Slant

Straight, Camel Back Style

Starter, Camel Back Style

Right Corner, Camel Back Style

End, Camel Back Style

Single Slant

Single slant wall coping is used where one wall abuts another.

Furnished in 24-inch lengths.

Size.....inches	9	13	18
Camel Back.....per foot	$.40	$.60	$1.20
Single Slant.....per foot	.80	1.20	2.40
Approx. Weight per Foot.....pounds	10	15	30

Fittings and Specials

Corners, closed ends and starters each take three times price of 1 foot of straight coping.

Angles, right or left, take five times the list price of 1 foot of coping of same size.

T's take eight times list price of 1 foot of coping of same size.

Straight lengths 1 foot or less, list price of 1 foot applies.

Straight lengths over 1 foot and less than 2 feet, list price of 2 feet apply.

Add 10 per cent for splitting coping before loading.

Chimney Pots

Unglazed—Buff Colored

Meadowbrook

Fairlawn

Hollywood

Robinson

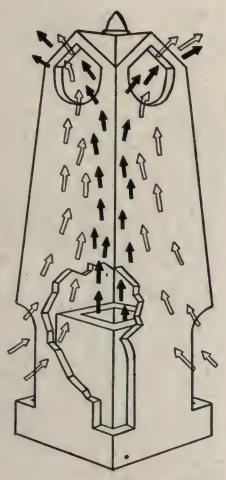


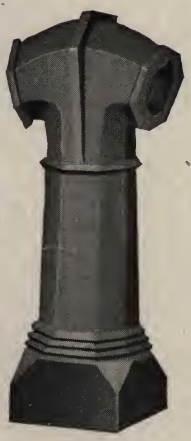
Diagram of Robinson Chimney Pot

Style	Each	Inside Opening Inches	Diameter Inches	Base Outside Inches	Height Inches	Flue Outside Inches	Approximate Weight Pounds
H-Meadowbrook **813**	**$12.00**	7½x12	..	12½x17	24	8½x13	95
H-Meadowbrook **1313**	**15.00**	.....	12	17 x17	24	13 x13	115
J-Fairlawn **813**	**7.50**	7½x12	..	12½x17	12	8½x13	50
J-Fairlawn **1313**	**9.00**	.....	12	17 x17	12	13 x13	58
K-Hollywood **813**	**9.00**	7½x12	..	12½x17	20	8½x13	76
K-Hollywood **1313**	**12.00**	.....	12	17 x17	20	13 x13	82
R-Robinson **88**	**18.00**	7¼x 7¼	..	13 x13	37	8½x8½	160.5
R-Robinson **813**	**24.00**	7 x11½	..	13 x18	38	8½x13	219

Chimney Tops

Unglazed—Styles A, B, C, D and E

Style A



Style B

Style C

Style D

Style E

Style	A	B	C	D	E
Each	**$8.25**	**9.75**	**6.00**	**12.75**	**8.25**
Height ... feet	3	3	2	3	3
Base Outside ... inches	13x13	13x13	13x13	13x13	13x13

Fire Clay Flue Lining

Rectangular

Outside Dimen. Inches	Per Foot	Length Feet	Thickness Inches	Approx. Wt., Lb. per Ft.
4½x 8½	$.45	2	⅝	11
4½x13	.60	2	⅝	18
7½x 7½	.45	2	⅝	14
8½x 8½	.60	2	⅝	18
8½x13	.90	2	¾	27
8½x18	1.35	2	⅞	36
13 x13	1.15	2	⅞	35
13 x18	1.75	2	⅞	45
18 x18	2.25	2	1⅛	70
20 x20	3.25	2	1⅜	103
20 x24	3.75	2	1½	115
24 x24	4.25	2	1½	129

Round—Unglazed

I.D. Inches	Per Foot	Length Feet	Thickness Inches	Approx. Wt., Lb. per Ft.
6	$.45	2	⅝	11
7	.70	2	11/16	16
8	.70	2	¾	17
10	1.05	2	⅞	27
12	1.35	2	1	37
15	1.80	2	1⅛	52
18	2.50	2	1¼	67
20	3.00	2	1⅜	90
22	4.00	2	1⅝	110
24	4.50	2	1⅝	120
27	6.50	2½, 3	2	186
30	7.20	2½, 3	2⅛	218
33	9.00	2½, 3	2¼	315
36	10.25	2½, 3	2½	330

Fire Clay Stove Pipe and Fittings

Unglazed

Bottom

Double Opening

Anchor Bonnet (Female)

Chimney Base (Male)

Anchor bonnets and chimney bases can be furnished with sockets (female) or without sockets (male).

Size Inches	Stove Pipe per Foot	Single Openings and Bottoms Each	Double Openings, Chimney Bases, Anchor Bonnets Each	Drop Bottoms Each
6	$.45	$1.80	$2.25	$2.70
7	.70	2.80	3.50	4.20
8	.70	2.80	3.50	4.20

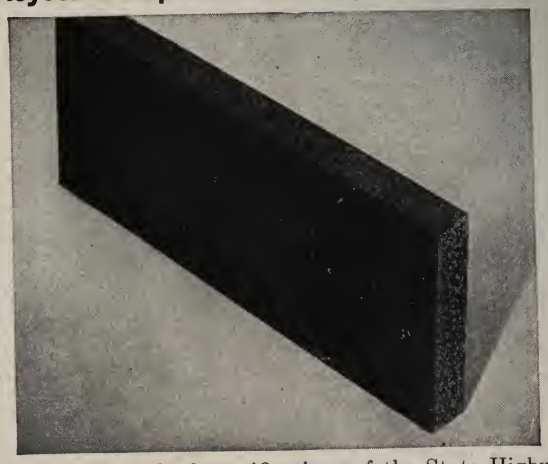
Mandary tops, O.G., keg bonnets and bird cage wind-guards, with or without sockets, 8 inches and under, take seven times the list price of 1 foot stove pipe of same size.

Flue Rings

Size Inches	Each	Lengths Inches	Thick. Inches
3	$.60	4½, 6, 9 and 12	⅝
4	.60	4½, 6, 9 and 12	⅝
5	.75	4½, 6, 9 and 12	⅝
6	.75	4½, 6, 9 and 12	⅝
7	1.05	4½, 6, 9 and 12	11/16
8	1.05	4½, 6, 9 and 12	¾
10	1.25	4½, 6, 9 and 12	⅞
12	1.50	4½, 6, 9 and 12	1

Not made in lengths over 12 inches. Sizes not listed take two times price of 1 foot of round flue lining of same size.

Keystone Asphalt Fiber Expansion Joints



Meets all standard specifications of the State Highway Departments covering fiber non-extruding type. Meets specification M-59-42 of the American Association of State Highway Officials. Conforms with War Department Construction Quartermasters specification 4 YD. Approved by the Navy Department, U. S. Engineers and the Civil Aeronautics Association, Bureau of Public Roads, Federal Works Agency, and all branches of Federal Government construction.

It is a non-oozing product designed to eliminate jar to high-speed traffic that might be caused by extrusion of the joint filler. Used in all types of concrete construction work, such as highways, airport runways, sidewalks, driveways, or large floor areas.

High quality fiber is treated with a special impregnation process of waterproof asphalt. This material is compressible to 50 per cent of its original thickness under a pressure not exceeding 750 pounds per square inch. The asphalt content is from 35 to 50 per cent by weight.

The material re-expands after compression to at least 70 per cent of its original thickness. Under compression, this joint has very little, if any, extrusion.

Light in weight and easy to handle under all weather conditions. Does not become sticky or tacky in the summer months, nor hard and brittle in cold weather. It is seasoned —treated and cured before shipping.

Available in ¼, ⅜, ½, ¾, and 1-inch thicknesses. Standard size slab is 48 inches by 10 feet; other slab sizes are available. Can be furnished in any cut sizes required; also plain or punched for dowels.

Per 100 Lineal Feet

Width Inches	Thickness, Inches ⅛ and ¼	⅜	½	¾	1
2	$3.70	$4.60	$5.70	$8.00	$10.40
2½	4.40	5.50	6.80	9.50	12.40
3	5.10	6.30	7.90	10.90	14.30
3½	5.80	7.20	9.00	12.30	16.20
4	6.40	8.00	10.10	13.70	18.00
4½	7.20	9.00	11.40	15.50	20.30
5	8.00	10.00	12.60	17.20	22.60
5½	8.80	11.00	13.90	18.90	24.80
6	9.60	12.00	15.10	20.50	27.00
6½	10.40	13.00	16.40	22.30	29.40
7	11.20	14.00	17.70	24.00	31.70
7½	12.00	15.00	19.00	25.70	33.90
8	12.80	16.00	20.20	27.40	36.10
8½	13.60	17.00	21.50	29.10	38.30
9	14.40	18.00	22.80	30.80	40.50
9½	15.10	18.90	23.90	32.30	42.50
10	15.80	19.80	25.00	33.80	44.50
10½	16.60	20.70	26.20	35.40	46.50
11	17.30	21.60	27.30	36.90	48.60
11½	18.00	22.50	28.40	38.50	50.70
12	18.70	23.40	29.40	40.00	52.70

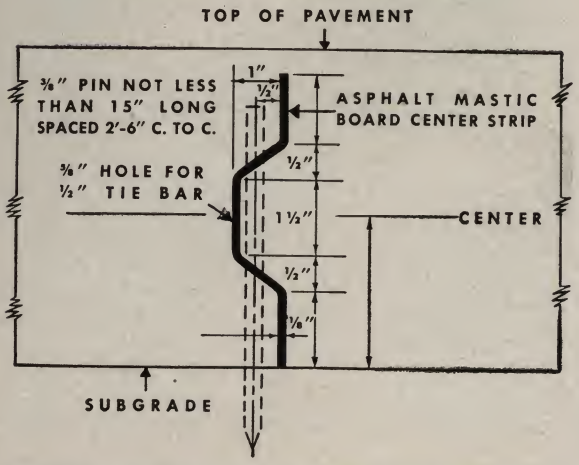
Prices for widths greater than 12 inches are proportional to prices of 12-inch material of the same thickness.

Furnished in widths up to 36 inches and in any length, but usually 5 or 10 feet are standard.

Keystone Asphalt Center Strips

Mastic Board for Longitudinal and Transverse Pavement Joints

Rectangular Tongue and Groove Type



Keystone tongue and groove joints have been approved and specified by the Bureau of Public Roads, U.S. Engineers, U.S. Navy, Civil Aeronautics Authority, District of Columbia, State Highway Departments, as well as most Federal Agencies and leading engineering authorities. It is widely used not only as a longitudinal center strip but as a transverse contraction joint.

The principle of the tongue-and-groove design to obtain maximum load transmission, either with or without dowel bars, is such a natural engineering advantage that it has been generally accepted throughout the nation.

Stake pins, cap plates, and all accessories necessary for installation can be furnished.

METHOD OF INSTALLATION: Keystone Mastic Board Strip is furnished in any width and length. Standard lengths are 10 feet, 1 inch, to provide for overlap—customers are charged for 10 feet only.

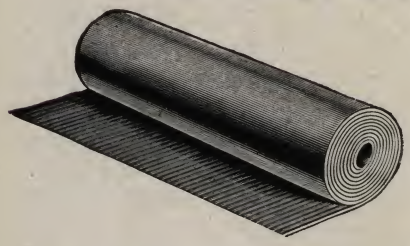
Standard punching 2 feet, 6 inches, on centers for dowel bars and 24 inches on center for stakes. Stakes are 16-gage channel type, 15 inches long, and provide for a perfect fit, eliminating any slipping or displacement.

The use of cap plate is recommended to give better rigidity and functions as a straight edge for speed and accuracy in edging the joint.

Installing devices are furnished for longitudinal center joints to assure accurate spacing and alignment while the concrete is being poured.

Thickness of Slab...inches	6	7	8	9	10
Per 1000 Lineal Feet.....	$60.00	65.00	70.00	80.00	85.00
Width of Center Strip..in.	5½	6½	7½	8½	9½
Approx. Ship. Wt. 1000 Lineal Ft., Crated....lb.	600	670	740	810	885

Switchboard Matting



Madefromhigh grade crude rubber, and only such dry ingredients as will insure protection from short circuits, etc.

Made with either smooth or corrugated surfaces; full thickness; with one ply heavy sheeting in center. Contains no metallic substances.

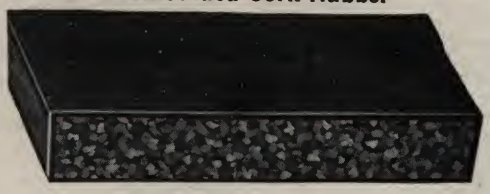
Matting 3/16 inch thick resists 20000 volts, ¼ inch thick 50000 volts, ⅜ inch thick 60000 volts. All switchboard matting should be tested before being put into service.

Prices upon application.

Servicised Expansion Joints

Conform to the State of Florida's Specifications as well as Navy Specifications and to Federal Specifications HH-F-341, Types I and IV.

Premoulded Cork Rubber



A highly elastic non-extruding preformed joint filler consisting of particles of new live cork which are bound together with rubber. Will recover up to 90 per cent and greater after being compressed to 50 per cent of its original thickness. Because of its limited extrusion, it is in the non-oozing class.

Approved and specified by the Bureau of Public Roads. Used extensively by many of the Federal Departments, for instance, TVA and U.S. Government District Engineer's Offices in connection with lock and dam construction work.

Used not only in concrete pavement construction, but also in concrete base pavements having asphaltic or other surface course where it is highly effective without disturbing the wearing surface of the pavement.

Desirable in bridge construction, swimming pools, sidewalks, and other types of monolithic structures where the extruding and unsightly oozing type of premoulded asphalt joint is objectionable. When used in concrete pavement, it is highly efficient in conjunction with the waterproof seal required by various State Highway Departments.

Resin Bound Corks

Like cork rubber, it has a high degree of resiliency and meets identical physical tests and specifications with the exception that the binder for the cork particles is of synthetic resin rather than rubber.

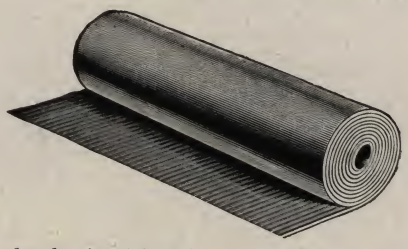
We Shall Be Glad to Furnish any Additional Information Requested

Sheet Cork

Made from a selected grade of pure virgin shredded cork. Cuts clean and does not crumble. A special binder holds the body together. Has smooth surface and color is uniform.

No.	Size Inches	Sheets per Box	Price per 100 Sheets
C-1001	36x12x1/16	20	.....
C-1003	36x12x3/32	20	.....
C-1005	36x12x⅛	20	.....

Corrugated Rubber Matting



Rubber matting will stand any amount of water and mud without injury. Dries quickly and is durable, withstanding wear better than other kinds of floor covering. Can also be furnished in colors of red or white, or with white top and black back. Regular styles are: Corrugated, Pyramid, Pebbled, and Smooth.

Thicknesses vary from 3/32 to ¼-inch. Regular width is 36 inches; maximum, 48 inches; in rolls of 50 yards.

Shorter lengths up to 28 feet, can be had in widths up to 78 inches. Prices upon application.

Red Sheet Packing

Will pack an air, steam, hot or cold water joint equally well. It is a non-conductor. Particularly adapted to packing expansion or steam joints, as it does not burn or char.

It will make a tight joint, however rough the surfaces may be to which it is applied. Joints should be faced with plumbago, lamp black or chalk.

Furnished in 1/16, 3/32 and 1/8-inch thicknesses. Weight, per roll, about 200 pounds.

Per Pound..... **$.90**

U. S. Rainbow Sheet Packing

Will pack an air, steam, hot or cold water joint equally well.

Fully tested to stand in service, without melting down and blowing out, a pressure of 150 lbs. of saturated steam.

Sufficiently pliable to fill up any irregularities in the flange and has necessary resilience to overcome vibration, contraction and expansion in line.

Standard rolls 36 inches wide.

Thickness	inches	1/16	3/32	1/8
Approx. Weight per Sq. Yd	pounds	5 3/8	8 1/8	10 3/4

Diaphragm Sheet Packing

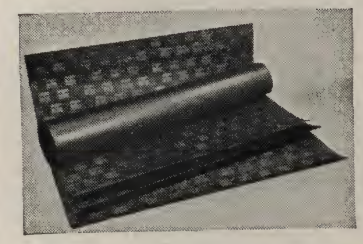
Made of a superior quality of rubber, with a special woven heavy duck insertion. Standard thickness 1/16, 3/32, 1/8, 3/16, and 1/4 inch. Special thickness can be manufactured upon request.

Made with a high quality of friction between plies.

To be used for steam, water and damper regulators.

Per Pound..... **$2.00**

No. 182 Linear Compressed Asbestos Fibre Sheet Packing



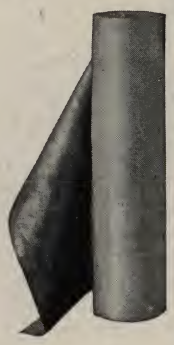
For use of power, processing and refining industries as a gasketing material against super-heated or saturated steam, air, gas, oil, water, ammonia and most chemicals.

Selected long fibre asbestos and heat-resisting compound bonded and felted into a homogeneous sheet. Graphited on one side. Adaptable to refinery service. Supplied without graphite upon request.

Size Sheet	inches	50x50	50x50	50x50
Thickness	inches	1/32	1/16	1/8
Weight per Sheet	pounds	5	10 1/8	20 1/4

Linear Asbestos Metallic Sheet Packing

No. 184, Sheet Form, Red and Black
No. G184, Gasket Form, Red and Black
No. 183, Sheet Form, White Finish
No. G183, Gasket Form, White Finish



Made of asbestos fabric interwoven with fine brass wire treated on one side with a red heat-resisting compound which makes the gasket adhere to the flange when the joint is broken, and graphited on the other side so that the joint may be taken apart without destroying the gasket. Recommended for service on cylinder heads and all general gasoline and Diesel engine work. Can be used against steam, low, medium or high pressure air and water. No. 183 finished white both sides or one side graphited.

Thickness, 1/32 and 1/16 inch.

No. 185 Linear Compressed Asbestos Fibre Sheet Packing

Neoprene Binder

Recommended for gasketing against mineral oils and petroleum solvents, Freon, Methyl Chloride and other refrigerants, vegetable oils, animal oils, turpentine and carbon tetrachloride. Successfully employed against benzine, organic and mineral acids with the exception of nitric acid.

Made from carefully selected Canadian asbestos fibre bonded and sealed with a neoprene compound. Can be furnished plain or graphited one or both sides.

Standard sheet size, 50x50 inches.

Standard Thickness	inches	1/32	1/16	1/8
Approx. Wt. per Sheet	pounds	5	10	20
No. 185	per pound	....		

Linear Waterproof Hydraulic Flax Packing

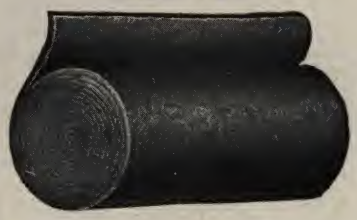
No. C203, Coil or Reel **No. S203, Spiral**
No. R203, Ring

Made of extra quality long fibre flax, thoroughly waterproofed and graphited.

Recommended for the most severe hydraulic service on accumulators, hydraulic pumps, rams, hydraulic presses and elevator plungers, and outside packed pumps handling cold water brine and cold oil.

Will be furnished ungraphited for paper mill service when specified. Available in 3 densities—hard, soft or medium. Furnished medium unless otherwise designated. Sizes 1/8 inch and larger, varying by 16ths.

Sheet Felt



In seven grades; fine white, medium fine white, coarse white, shoe manufacturers' felts, block cutter felt, grey felt, and oil box.

Sheet is 16 to 36 inches square, ¼ to 3 inches thick.

Felts over 36 inches square or over 3 inches thick cost .05 cents per pound extra.

Felts under ¼ inch thick cost .25 cents per pound extra.

Any size sheet made to order.

Prices upon application.

No. S-101 High-Pressure Asbestos Rubber Back Steam Packing

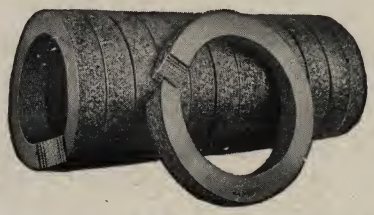
Recommended for all high-pressure steam and air conditions. Asbestos cloth for both center block and outside plies is made from best long-fiber asbestos. Non-vulcanizing, red rubber back supplies the necessary flexibility and softness. Packing is held together with a high quality, heat-resisting friction and is lubricated and graphited. Furnished in spirals, 12½ feet long.

Size.....inches	¼	5/16	⅜	½	⅝	¾	⅞	1
Wt. per 100 Ft.....lb.	6	9	12½	22	28	47	56	77

Prices upon application.

Linear Low-Pressure Steam Packing

No. C-302, Coil; No. S-302, Spiral; No. R-302, Ring



A high quality duck and rubber packing for all low-pressure steam uses. Made from an excellent grade of duck, held firmly together by a rubber friction of best quality. Also gives good service on hot water and ammonia work.

Sizes, 3/16 to 1½ inches. No. C-302 furnished in coils 12½ feet long; No. S-302 in spirals 12½ feet long.

Prices upon application.

No. 125 Linear Asbestos Braided Valve Stem Packing

Used for general service on all angle and globe valves with small packing spaces. For valves handling high and low pressure steam, oil, water, air, and ammonia.

Made of Canadian long fiber asbestos yarn. Each strand is impregnated with a heat-resisting lubricant and graphited before braiding.

Furnished in all standard packing sizes, ⅛ inch and larger, varying by sixteenths.

Packed on 1, 2, and 5-pound spools.

Prices upon application.

No. 126 Linear Asbestos Twisted Valve Stem Packing

Used for general service on globe, angle, and gate valves. Convenient for packing small boxes by unraveling strands to the size required.

Made of Canadian long fiber asbestos yarn twisted to size. Treated with heat-resisting lubricants and graphited throughout.

Furnished in all standard packing sizes, 1/16 inch and larger, varying by sixteenths.

Packed on 1, 2, and 5-pound spools. If desired, ¼ and ½-pound spools can be supplied.

Prices upon application.

Linear Pure Asbestos Hot Oil Packing

No. C170, Coil or Reel No. R170, Ring

Designed expressly for equipment handling petroleum products at extreme temperatures.

Made of pure asbestos yarn sealed between the jackets with a compound impervious to the action of hot oils, and surface graphited.

Recommended for use on valve stems, rotary shafts and reciprocating rods and plungers handling asphaltic and heavy oils, crude, gasoline, benzol and kerosene either hot or cold.

Sizes ⅛ inch and larger, varying by 16ths.

Linear Round Braided Asbestos Packing

No. C103, Coil or Reel—No. R103, Ring

This packing is manufactured from selected long fibre asbestos yarn laid up braid over braid. Having each strand of yarn lubricated before braiding with high flash cylinder oil and pure flake graphite makes this a soft and pliable packing. Recommended for steam piston rods, pumps handling gas, compressed air, oils and some chemicals.

With Wire

No. C106, Coil or Reel—No. R106, Ring

Same as No. 103 but with a fine annealed copper wire twisted in the asbestos yarn; for higher temperatures.

Sizes ⅛ inch and larger, varying by 16ths.

Linear Square Braided Asbestos Packing

No. C118, Coil or Reel **No. R118, Ring**

Made of selected long fibre asbestos yarn, braid over braid, each strand being thoroughly lubricated and graphited, then braided to the exact size.

Recommended for air compressors, piston and valve rods, against steam, oil and chemicals.

Also used on centrifugal pumps, expansion joints and pistons on reverse gears.

For gasoline and other petroleum solvents, No. 108 is recommended.

Sizes ⅛ inch and larger, varying by 16ths.

Linear Asbestos Centrifugal Pump Packing

No. C112, Coil No. S112, Spiral
No. R112, Ring

Made from long fibre asbestos yarn, each strand thoroughly lubricated and graphited. Does not carbonize or become hard, insures minimum friction and eliminates cutting of sleeves and shafts.

Recommended for general centrifugal pump use, on hot or cold water, oil and most acids.

Sizes ⅛ inch and larger, varying by 16ths.

Linear Loose Plastic Packing

No. 900 for Temp. up to 550° F.
No. 906 for Temp. 550° to 1200° F.
No. 912 for Temp. up to 1200° F. (No Metal)

Linear Plastic Packings are specially prepared combinations of long fibre asbestos, frictionless metals, lubrications and finest quality graphites. They are so compounded that all asbestos and metal ingredients are completely covered with lubricant and graphite. The packing has great internal strength and will not harden in the stuffing box under high heat or pressure.

Furnished in 10, 5 and 2-pound cans.

No. **900** is designed especially for steam, oil, petroleum solvents, air, water, caustic, ammonia, alkalies, acids and chemicals not destructive to lead. Temperatures up to 550° F. Volume, 10 cubic inches per pound, fully compressed.

No. **906** for use on equipment handling superheated steam, gases, oils, etc. Temperatures 550° to 1200° F. Volume 13 cubic inches per pound, fully compressed.

No. **912** containing no metals, gives excellent service on gritty liquids, crystalline liquors, chemicals, or any installations where presence of metal is undesirable. Any pressure and temperature up to 1200° F. Volume, 17 cubic inches per pound, fully compressed.

White Plastic Packings, specially compounded, can also be furnished for use in handling food products and also against petroleum or coal tar products where discoloration of the liquid is objectionable.

Square Braided Jute Packing

Used for yarning cast iron water main joints where leadite and other lead substitutes are used.

Made from selected fiber.

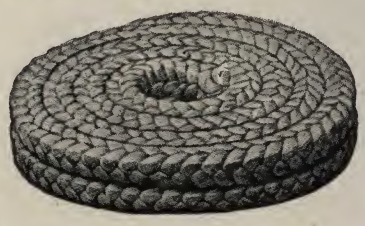
Sizes, ⅜, ½, ⅝, and ¾-inch diameters. Unoiled.

Put up in 50 pound cartons.

Per Pound..... ....

Linear Square Flax Packing

No. C207, Coil **No. R207, Ring**



Used for service on all hydraulic and cold water conditions.

Made from pure flax fibre of medium length, square plaited without corners or centers; lubricated with tallow compound. Sizes ⅛ inch and larger, varying by 16ths.

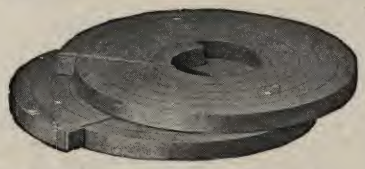
No. C207, furnished in continuous lengths, boxed; also 25-pound reels.

When ordering rings or sets, give diameter of rod, inside diameter of stuffing box and depth or number of rings required.

Prices upon request.

Linear White Friction Fine Duck Hydraulic Packing

No. C337, Coil **No. R337, Mortise Joint Ring**
No. C337, Stitched **No. R338, Solid Ring**



Constructed of high quality materials, this packing is for use on hot or cold water on inside packed pumps. Furnished rock hard when used for extremely hot water. Sizes ⅛ inch and larger, varying by 16ths.

Linear Black Friction Cold Water Tucks Packing

No. C339, Coil **No. R339, Ring**

Constructed of heavy duck and good quality black friction. For medium pressure cold water service on inside packed plungers. Sizes ⅛ inch and larger, varying by 16ths.

Asbestos Rope Packing

One of the best and most durable packings known for locomotives, marine and stationary engines, etc. Not affected by acids, dampness, or heat.

Made of the finest long fibre asbestos spun and twisted into ropes of any desired size from ¼ inch to 2 inches in diameter.

Per Pound..... ....

Asbestos Wick

Standard asbestos wick is long fibered, hard twisted for wire wiping and stem packing.

Furnished in ½ and 1-pound balls.

Candle Wick

For packing small valve stems, etc.

Carefully manufactured of cotton specially selected for the purpose.

Furnished in ⅛ and ¼-pound balls.

Per Pound..... ....

Hemp and Jute Packing

American Hemp Packing.....per pound ....
Italian A Hemp Packing.....per pound ....
Italian B Hemp Packing.....per pound ....
Italian AA Hemp Packing.....per pound ....
Jute Packing, for Calking.....per pound ....

Victor Twisted Jute Packing

In 50 or 100-Pound Coils

Tarred.....per lb. ....
Untarred Oiled.....per lb. ....
Untarred Dry, No Oil....per lb. ....

Rope Oakum

This is made entirely of jute, and comes in the form of a rope, about 1½ inches in diameter, wound in coils of about 50 pounds each.

Untarred, it is used for caulking of water supply pipes. Tarred, it is used for all other kinds of pipe caulking.

Per Pound..... ....

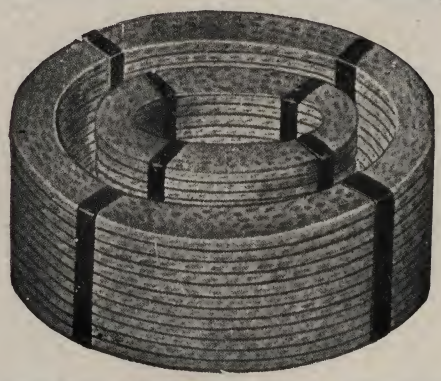
Oakum

Put up in 50-pound bales.

Best Spun.....
.....per bale .....
Best Unspun.....
.....per bale .....
Plumbers'.....
.....per bale .....

Linear Folded Wire Inserted Asbestos Gaskets

No. 192 Manhole Sizes **No. 193 Handhole Sizes**



Recommended for all steam conditions. Made from closely woven long fibre asbestos cloth, with fine brass wire insertion, folded and frictioned together with a high quality heat resisting white rubber cement. Furnished in all regular manhole and handhole sizes and to fit B. & W., Heine, Edgemoor boilers, etc. In ordering regular oval or round shapes, give inside diameters, width of flange and thickness. If odd sizes are desired, furnish template or drawing.

Prices upon application.

Cotton and Wool Waste

Less than 50-pound bale takes 2 cents per pound advance over 100-pound bale.

Fifty-pound bale takes ½ cent per pound advance over 100-pound bale.

No. **1**, White Cotton Waste.....per pound ....
No. **2**, White Cotton Waste.....per pound ....
Machined Cop Waste.....per pound ....
No. **1**, Colored Cotton Waste.....per pound ....
No. **2**, Colored Cotton Waste.....per pound ....
No. **3**, Colored Cotton Waste.....per pound ....
Wool Waste.....per pound ....

Wiping Rags

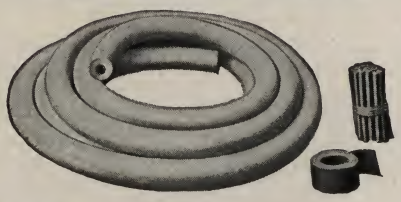
A selected grade of white wiping rags is carried in stock, with all buttons and stiff pieces taken off and which have been thoroughly washed and disinfected.

Light mixed or colored wiping rags can also be furnished.

Put up in 100-pound bales.

Grade.....	No. 1 White	No. 1 Colored	Underwear
Per Pound.....	.....	.....	.....

Eclipse Sectional Gaskets



Consists of a tube of Rainbow Compound having a central hole throughout its length. A short metal connecting tube is inserted in the center of both ends, the two butted ends being wrapped with a special tape, thus forming a continuous gasket.

¼ and ⅜-inch for pipe unions, ½-inch for handhole plates, ⅝ and ¾-inch for manhole plates, ⅞ and 1-inch for extra large manhole plates. Furnished in either coil or reel form. Prices on application.

Rose Washer and Gasket Cutters

Cuts material down to writing paper thickness. Cuts asbestos and every kind of sheet packing, as well as glass.

No.....	3	4
Each.....	**$23.00**	**32.00**
Cuts.....in.	4½ to 21	6 to 36

Glass Cutter Attachment...each **$2.00**

Johnson Washer Cutters

No. 352 will cut washers 6 inches in diameter.

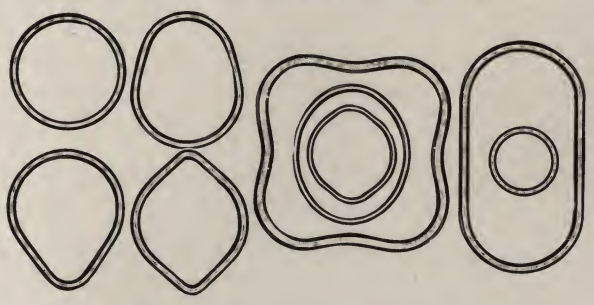
No. 353 will cut washers 8 inches in diameter.

Packed 6 in a box.

No.....	352	353
Per Dozen.....	.....	.....

Soft Steel Jacket Asbestos Filled Gaskets

For Water Tube Boilers and Steel Barrels



These gaskets will not only give longer and more satisfactory service, but are a great saving in labor cost for cleaning boilers, as they will actually fall off when the plate is removed, and no scraping is necessary. They can be used over and over again.

These gaskets are made for all the leading makes of boilers and a large stock is carried.

Style of boiler tube gaskets:

Round Heine
Oval Heine
B & W Square No. 28
B & W Oval No. 24 and 48
B & W Diamond No. 107 or 40
Edge Moor Oval
Large Geary or Oil City 4 Inch
Small Geary or Oil City 3½ Inch
Springfield Cloverleaf
Keeler Round 4¼ Inch
Keeler or Atlas Diamond Shape
Erie City Oval
Walsh and Weidner Diamond Shape
Wickes Pear Shape
Union Pear Shape
B & W Oval Corrugated Ground Joints (Does Away with Grinding Surfaces)
B & W Bolt Nut Corrugated
B & W Round Corrugated with Lugs
Round Barrel Gaskets in All Sizes

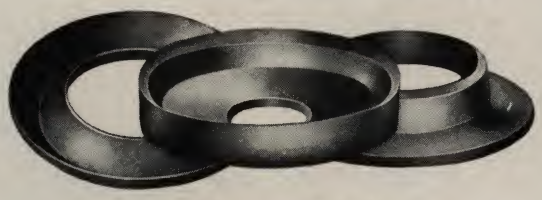
Rhoads Tannate Leather Hydraulic Discs and Washers

For use with water, oil, other fluids or air.

Size Inches	Per 100	Size Inches	Per 100	Size Inches	Per 100
1	$3.00	7	$147.00	14	$588.00
1¼	4.50	7¼	157.00	14½	630.50
1½	6.50	7½	168.50	15	675.00
1¾	8.00	7¾	180.00	15½	720.00
2	12.00	8	192.00	16	768.00
2¼	16.00	8¼	204.00	17	867.00
2½	18.00	8½	216.50	18	972.00
2¾	22.50	8¾	229.50	19	1083.00
3	27.00	9	243.00	20	1200.00
3¼	31.50	9¼	255.50	21	1323.00
3½	36.50	9½	270.50	22	1452.00
3¾	42.00	9¾	285.00	23	1587.00
4	48.00	10	300.00	24	1728.00
4¼	54.00	10¼	315.00	25	1875.00
4½	60.50	10½	330.00	26	2028.00
4¾	67.50	10¾	346.50	27	2187.00
5	75.00	11	363.00	28	2352.00
5¼	82.50	11¼	379.50	29	2523.00
5½	90.50	11½	396.50	30	2700.00
5¾	99.00	11¾	414.00	31	2883.00
6	108.00	12	432.00	32	3072.00
6¼	117.00	12½	468.50	33	3267.00
6½	126.50	13	507.00	34	3468.00
6¾	136.50	13½	546.50	35	3675.00
				36	3888.00

Sizes not listed take next higher price.

Rhoads Tannate Leather Packings



Cups, Flange and Vee Packings

U Packings

For use with water, oil, other fluids or air. Well suited for packing service because of its pliability, strength and body. Regular Tannate packings resist heat up to 170°F. Specially heat resistant Tannate packings withstand temperatures up to 212°F. with no appreciable bad effect to the packing.

Cups, Flange and Vee Packings

O.D. In.	Per 100
Not Over ⅝" High	
1	$38.50
1¼	43.00
1½	48.50
1¾	53.50
2	60.50
2¼	67.00
2½	73.50
2¾	81.50
Not Over ¾" High	
3	$96.50
3¼	105.50
3½	114.50
3¾	122.50
4	131.50
4¼	141.50
4½	152.00
4¾	162.50
Not Over 1" High	
5	$197.00
5¼	209.50
5½	222.00
5¾	235.50
6	250.00
6¼	262.50
6½	276.50
6¾	291.00
7	306.00
7¼	320.50
Not Over 1¼" High	
7½	$367.00
7¾	386.00
8	405.00
8¼	424.50
8½	444.50
8¾	464.50
9	485.00
9¼	505.00
9½	525.00
9¾	545.50

O.D. In.	Per 100
Not Over 1½" High	
10	$605.00
10¼	626.50
10½	648.50
10¾	670.50
11	693.00
11¼	716.00
11½	739.50
11¾	763.00
Not Over 1¾" High	
12	$834.00
12½	890.50
13	948.50
13½	1001.50
14	1056.50
14½	1114.00
15	1172.50
15½	1233.50
Not Over 2" High	
16	$1356.00
16½	1421.00
17	1488.00
17½	1556.50
18	1626.50
18½	1696.50
19	1768.00
19½	1841.50
20	1916.00
20½	1997.50
21	2081.00
21½	2165.50
22	2251.50
22½	2333.50
23	2417.00
23½	2502.00
24	2588.50
25	2765.50
26	2949.00
27	3140.50
28	3338.00
29	3542.00
30	3751.50
31	4033.00
32	4320.00
33	4554.50
34	4795.50
35	5044.00
36	5299.00

U Packings

O.D. In.	Per 100
Not Over ½" High	
1	$69.00
1¼	76.00
1½	84.50
1¾	94.00
2	100.50
2¼	109.50
2½	120.00
2¾	130.50
Not Over ⅝" High	
3	$158.50
3¼	170.00
3½	182.50
3¾	195.50
4	208.00
4¼	222.50
4½	237.50
4¾	251.50
Not Over ⅞" High	
5	$317.00
5¼	332.50
5½	349.50
5¾	367.00
6	385.50
6¼	402.50
6½	418.50
6¾	437.50
7	457.00
7¼	476.00
Not Over 1⅛" High	
7½	$585.50
7¾	607.00
8	629.50
8¼	651.50
8½	675.00
8¾	698.00
9	721.50
9¼	745.00
9½	769.50
9¾	795.00

O.D. In.	Per 100
Not Over 1⅜" High	
10	$913.50
10¼	940.00
10½	967.50
10¾	995.50
11	1025.00
11¼	1052.50
11½	1082.00
11¾	1111.50
Not Over 1⅝" High	
12	$1252.50
12½	1317.50
13	1397.50
13½	1464.00
14	1532.50
14½	1599.50
15	1667.00
15½	1738.50
16	1812.00
16½	1886.50
17	1963.50
17½	2043.50
18	2123.50
18½	2204.00
19	2286.50
19½	2369.50
20	2456.50
20½	2544.00
21	2632.50
21½	2722.50
22	2841.50
22½	2934.00
23	3029.50
23½	3125.50
24	3223.00
25	3425.50
26	3633.50
27	3850.50
28	4074.00
29	4306.50
30	4630.00
31	4873.50
32	5123.00
33	5381.50
34	5642.50
35	5910.50
36	6184.00

Sizes not listed take next higher price.

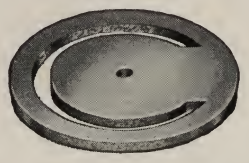
Cupped Plunger Leathers

For Pump Cylinders

Size Inches	Per Doz.	Size Inches	Per Doz.	Size Inches	Per Doz.
3/4	$.65	2	$1.65	3 1/2	$4.00
1	.65	2 1/4	1.80	4	5.15
1 1/4	.80	2 1/2	2.15	4 1/2	6.25
1 1/2	1.10	2 3/4	2.40	5	7.90
1 5/8	1.25	3	2.70	...	....
1 3/4	1.40	3 1/4	3.25	...	....

Common Valve Leathers

For Pump Cylinders



Size Inches	Per Doz.	Size Inches	Per Doz.	Size Inches	Per Doz.
2	$1.20	3	$2.30	4 1/2	$5.00
2 1/4	1.50	3 1/4	2.75	5	6.65
2 1/2	1.75	3 1/2	3.15	...	....
2 3/4	2.20	4	3.95	...	....

No. 701 Clayton Mark Flat Plunger Leathers

Made from high-grade oak-tanned leather stock; clean cut and true to dimensions.

Outside Diameter Inches	Per Dozen	For Valve Inches	Approx. Weight Pounds per Gross	Outside Diameter Inches	Per Dozen	For Valve Inches	Approx. Weight Pounds per Gross
2	$.73	1 1/2	1 3/4	4 1/2	$3.45	4	11
2 1/4	.87	1 3/4	2	4 3/4	3.82	4 1/4	15
2 1/2	1.07	2	3	5	4.36	4 1/2	17
2 3/4	1.31	2 1/4	3 1/4	5 3/4	5.81	5	19
3	1.52	2 1/2	4	6 3/4	8.35	6	26 1/2
3 1/4	1.82	2 3/4	5 1/2	7 3/4	11.62	7	29 3/4
3 1/2	2.00	3	5 3/4	8 3/4	14.52	8	37 1/2
3 3/4	2.40	3 1/4	7 3/4	9 3/4	17.42	9	46 3/4
4	2.73	3 1/2	9	10 3/4	21.78	10	65 1/4
4 1/4	3.09	3 3/4	9 3/4	...	.....	...	....

No. 708 Clayton Mark Leather Packing Rings

O.D. Inches	No. 708 Dozen	For Cylinder Inches
2	$.51	1 1/2
2 1/4	.58	1 3/4
2 1/2	.65	2
2 3/4	.73	2 1/4
3	.87	2 1/2
3 1/4	$1.01	2 3/4
3 1/2	1.17	3
3 3/4	1.38	3 1/4
4	1.67	3 1/2
4 1/4	1.89	3 3/4
4 1/2	1.89	4
5	2.04	4 1/4
5 1/4	2.18	4 1/2
5 3/4	2.75	5
6 3/4	3.63	6
7 3/4	5.08	7
8 3/4	6.53	8
9 3/4	8.71	9
10 3/4	10.89	10

Foot Valve Leathers

Size of Valve, In.	Each	Leather O.D., In.	Tongue In.	Size of Valve, In.	Each	Leather O.D., In.	Tongue In.
3/4	$.16	2 1/2	1 7/16	3	$.53	5 3/4	3 7/8
1	.16	2 1/2	1 7/16	3 1/2	1.05	7	4 7/8
1 1/4	.22	2 3/4	1 5/8	4	1.05	7	4 7/8
1 1/2	.26	3 1/4	1 7/8	4 1/2	1.95	9	6 1/4
2	.32	4 1/4	2 5/8	5	1.95	9	6 1/4
2 1/2	.53	5	3 1/4	6	1.95	10 1/8	7 1/4

Trench Pump Diaphragms

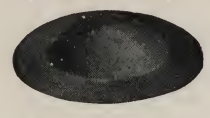
For Loud, Edson, and Gould Pumps

Standard quality. High grade rubber with a special weave of strong flexible fabric.

Designations refer to size and make of pump for which diaphragm is designed. Loud diaphragms may also be used on Deming pumps and Edson diaphragms on Rumsey pumps.

Style	Each	Overall Diam. Inches	Height Inches	Diam. Center to Center of Holes Inches	Wt. Lb. per 100
No. 1 Loud	$1.58	9 3/4	1 17/32	5 3/8	75
No. 2 Loud	2.12	13	1 9/32	6 3/4	152
No. 2 Edson	1.98	11 1/8	1 13/32	4 5/8	89
No. 3 Edson	2.31	12 7/8	1 17/32	6 11/16	151
No. 4 Edson	3.01	14 3/4	2 1/16	6 15/16	257
No. 2 Gould	1.93	11	1 13/16	4 3/4	103
No. 3 Gould	2.31	12 3/4	1 7/8	6 3/4	150
No. 4 Gould	3.01	14 1/2	2 33/64	7	253

Low Pressure Diaphragms



For use on low pressure heating systems.

Made of high-grade rubber with 2-ply duck insertions.

No.	Size Inches	Price Each	No.	Size Inches	Price Each
146	6	$.72	149	9	$1.08
147	7	.84	150	10	1.20
148	8	.96	443	12	1.90
		7/8-Inch Low Crown			
155	7	$.84	611	7 3/4	$.96

We are in position to furnish practically everything used in factory, mill or shop.

Jenkins Composition Pump Valves

Made from various compounds, each of which is best adapted for some particular type of service.

Only the best grades of rubber and synthetics are used.

No. 119-A.—High grade, very hard and tough, asbestos-reinforced compound for: hot water, at pressures up to 250 pounds and maximum temperature of 212°F.; and cold oil, at pressures up to 150 pounds and maximum temperatures of 125°F.

No. 80-A.—High grade, dark gray, hard rubber compound for: hot water, at pressures up to 150 pounds and maximum temperature of 212°F.; heavy mineral oils, at pressures not exceeding 100 pounds and normal temperature; and acids and alkalies of moderate concentration.

No. 88.—Semi-hard, very tough rubber compound for cold water, at pressures of 100 to 300 pounds and atmospheric temperature.

No. 93.—Medium-hard, dark gray rubber compound for cold water, at pressures up to 100 pounds and atmospheric temperature.

No. 294.—High grade, medium-soft, black rubber compound for: cold water, at pressures up to 150 pounds and atmospheric temperature; warm water, at pressures up to 50 pounds and maximum temperature of 150°F.

No. 94.—Semi-soft, dark gray rubber compound for cold water, at pressures up to 100 pounds and atmospheric temperature.

No. 15.—A soft, dark gray rubber compound for cold water, at pressures up to 50 pounds and atmospheric temperature.

No. 24.—High grade, soft black rubber compound for cold water, at pressures up to 50 pounds and atmospheric temperature.

No. 299.—High grade, medium-soft synthetic-rubber compound for mineral oil, at pressures up to 100 pounds and atmospheric temperature.

No. 936-A.—High grade, medium-soft synthetic-rubber compound for gasoline benzol and other solvents at pressures up to 100 pounds and atmospheric temperature.

O.D. In.	Thick. In.	Hole In.	Each	O.D. In.	Thick. In.	Hole In.	Each	O.D. In.	Thick. In.	Hole In.	Each
3	1/2	1/2	$.34	4 1/8	5/8	5/8	$.98	6	5/8	5/8	$1.80
3	1/2	3/8	.34	4 1/4	5/8	3/8	.88	6	3/4	1/2	2.10
3	5/8	1/2	.42	4 1/4	5/8	5/8	.85	6	3/4	5/8	2.10
3	5/8	5/8	.42	4 1/4	5/8	11/16	.85	6	3/4	3/4	2.05
3	3/4	1/2	.50	4 1/4	3/4	5/8	.95	6	3/4	7/8	2.05
3 1/8	1/2	1/2	.40	4 3/8	5/8	3/8	.92	6	7/8	1 1/4	2.35
3 1/8	5/8	1/2	.45	4 3/8	5/8	1/2	.92	6	1	3/4	2.80
3 1/8	5/8	5/8	.45	4 1/2	1/2	1/2	.80	6 1/4	5/8	5/8	1.90
3 1/4	1/2	1/2	.40	4 1/2	1/2	5/8	.76	6 1/4	3/4	1/2	2.25
3 1/4	1/2	3/8	.42	4 1/2	5/8	1/2	1.00	6 1/4	3/4	3/4	2.25
3 1/4	5/8	3/8	.50	4 1/2	5/8	5/8	.95	6 3/8	3/4	1/2	2.35
3 1/4	5/8	5/8	.50	4 1/2	5/8	3/4	.80	6 3/8	7/8	1/2	2.75
3 3/8	1/2	5/8	.42	4 1/2	3/4	5/8	1.15	6 1/2	5/8	5/8	2.00
3 1/2	1/2	1/2	.48	4 5/8	9/16	5/8	.85	6 1/2	3/4	3/4	2.40
3 1/2	1/2	5/8	.45	4 5/8	5/8	5/8	.95	6 1/2	7/8	1/2	2.90
3 1/2	9/16	5/8	.52	4 5/8	11/16	9/16	1.15	6 1/2	7/8	3/4	2.85
3 1/2	5/8	3/8	.60	4 5/8	11/16	11/16	1.05	6 1/2	1	3/4	3.35
3 1/2	5/8	5/8	.56	4 5/8	3/4	5/8	1.20	6 3/4	3/4	3/4	2.80
3 1/2	5/8	11/16	.56	4 3/4	1/2	5/8	.90	6 3/4	1	3/4	3.60
3 1/2	3/4	1/2	.67	4 3/4	1/2	1 1/8	.82	7	5/8	5/8	2.45
3 5/8	1/2	1/2	.50	4 3/4	5/8	5/8	1.05	7	3/4	3/4	3.10
3 5/8	1/2	5/8	.50	4 3/4	3/4	1/2	1.28	7	7/8	1/2	3.30
3 5/8	9/16	5/8	.56	4 3/4	3/4	5/8	1.28	7	1	1/2	3.80
3 5/8	5/8	5/8	.60	4 3/4	3/4	1 1/8	1.23	7	1	3/4	3.80
3 3/4	1/2	1/2	.56	4 3/4	7/8	5/8	1.50	7	1	1	3.80
3 3/4	5/8	3/8	.67	5	1/2	1/2	.90	7 1/4	5/8	5/8	2.60
3 3/4	5/8	5/8	.64	5	5/8	5/8	1.20	7 1/4	3/4	3/4	3.15
3 3/4	3/4	1/2	.70	5	3/4	1/2	1.45	7 1/4	1	3/4	4.25
3 7/8	1/2	1/2	.56	5	3/4	5/8	1.45	7 3/8	7/8	1 1/4	4.50
3 7/8	3/4	1/2	.85	5	3/4	3/4	1.45	7 1/2	5/8	5/8	2.70
4	1/2	1/2	.62	5 1/8	3/4	1/2	1.50	7 1/2	3/4	1/2	3.35
4	1/2	11/16	.60	5 1/4	5/8	5/8	1.36	7 1/2	3/4	3/4	3.25
4	9/16	5/8	.70	5 1/4	5/8	3/4	1.28	7 1/2	7/8	1 1/2	3.80
4	5/8	3/8	.80	5 1/4	3/4	5/8	1.56	7 1/2	1	3/4	4.30
4	5/8	5/8	.76	5 1/4	3/4	11/16	1.56	7 1/2	1	1 1/8	4.25
4	5/8	3/4	.75	5 1/2	5/8	5/8	1.45	8	3/4	3/4	3.80
4	11/16	7/8	.82	5 1/2	3/4	1/2	1.73	8	7/8	1	4.25
4	3/4	5/8	.90	5 1/2	3/4	5/8	1.67	8	7/8	1 1/4	3.80
4	3/4	11/16	.90	5 1/2	3/4	11/16	1.65	8	1	1/2	5.00
4	3/4	3/4	.90	5 1/2	7/8	3/4	2.00	8	1	5/8	5.00
4 1/16	3/4	1/2	.95	5 3/4	3/4	5/8	1.85	8	1	3/4	5.00
4 1/16	3/4	3/4	.92	6	1/2	1/2	1.36	8	1	1	4.50

Standard Water Hose List

Wrapped Construction

Size In.	3-Ply Per Foot	4-Ply Per Foot	5-Ply Per Foot	6-Ply Per Foot
1/2	$.45	$.55	....	....
3/4	.55	.65	....	....
1	.65	.75	$.87	....
1 1/4	...	.85	.98	....
1 1/2	...	.95	1.10	....
1 3/4	...	1.10	....	....
2	...	1.25	1.45	$1.65
2 1/2	...	1.55	1.75	2.10
3	...	1.90	2.20	....
4	...	2.60	3.00	3.50

Republic Tower Water Hose

Designed for general purpose, and is used where abnormal conditions or high pressures do not prevail.

Wrapped construction. Has a good tube, strong flexible carcass, and a tough cover. If pressures are intermittent, a greater number of plies should be used than recommended in the table.

Furnished in lengths up to 50 feet.

Sold from regular water base list.

Size Inches	Ply	Burst Press. Pounds	Working Press. Pounds	O.D. Inches	Wt. Lb. 100 Feet
1/2	3	775	200	29/32	24
1/2	4	925	225	31/32	27
1/2	5	1075	250	1 1/32	31
3/4	3	650	150	1 5/32	30
3/4	4	750	175	1 7/32	35
3/4	5	825	200	1 9/32	40
3/4	6	900	225	1 11/32	44
1	3	550	130	1 7/16	42
1	4	675	160	1 1/2	48
1	5	775	175	1 9/16	55
1	6	875	225	1 21/32	62
1 1/4	4	600	150	1 3/4	58
1 1/4	5	725	175	1 13/16	65
1 1/4	6	825	200	1 29/32	74
1 1/2	4	600	150	2 1/16	71
1 1/2	5	675	160	2 1/8	81
1 1/2	6	750	175	2 3/16	92
1 3/4	4	500	125	2 5/16	80
1 3/4	5	575	140	2 3/8	92
1 3/4	6	650	160	2 7/16	104
2	4	500	125	2 9/16	95
2	5	575	140	2 21/32	109
2	6	650	160	2 3/4	125
2 1/4	4	450	115	2 13/16	113
2 1/4	5	525	130	2 29/32	130
2 1/4	6	600	150	3	151
2 1/2	4	450	115	3 1/16	134
2 1/2	5	600	150	3 5/32	153

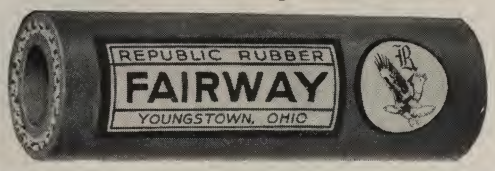
Republic Tonka Water Hose

A high grade general purpose hose with good abrasion-resisting cover. Recommended for service where conditions are not severe. A good hose for general wash-up service in industrial plants.

Furnished in lengths up to 500 feet in sizes up to 1 inch, and less on larger diameters.

Size.....in.	1/2	3/4	1	1	1 1/4	1 1/2	2
No. of Braids.....	3	3	2	3	3	3	3
Bursting Pressure..lb.	1100	900	500	650	450	400	350
Working Pressure..lb.	250	225	125	150	125	100	85
O.D.....in.	1 1/32	1 9/32	1 3/8	1 1/2	1 3/4	2 1/32	2 9/16

Republic Fairway Water Hose



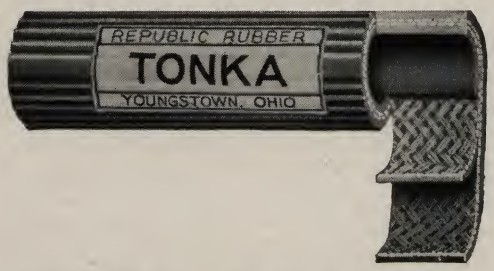
Rugged, kink-proof hose, molded and braided construction, with two braids of double stranded tightly twisted high tensile cord.

Designed for most severe outdoor work, such as golf courses and large estates or for contractor's use where long water lines are needed. Particularly recommended for greenhouse service, where its tough, brown, abrasion-resisting cover withstands cutting action of cinders and pulling around sharp corners.

Sizes, ½, ⅝, ¾, and 1 inch.

Furnished in continuous lengths up to 500 feet.

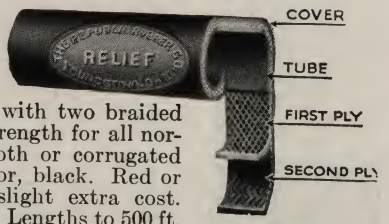
Tonka Garden Hose



For general home use. Built with two braided plies of double cord. Will not kink or break at the couplings. Smooth or ribbed black cover. Lengths up to 500 feet.

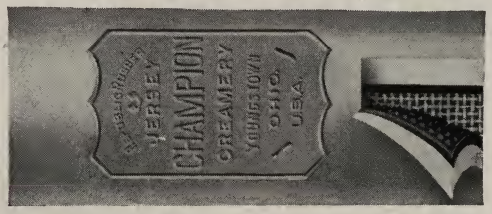
Size.....inches	½	⅝	¾
Weight, Uncoupled, per 100 Feet.....pounds	29	35	42

Republic Relief Brand Garden Hose



A kink-proof hose with two braided plies giving ample strength for all normal pressures. Smooth or corrugated cover. Standard color, black. Red or green available at slight extra cost. Sizes, ½, ⅝, ¾ inch. Lengths to 500 ft.

Champion Jersey Creamery Hose



Designed for use in food handling plants; resists the action of animal fats, greases and hot water under normal conditions. Wrapped construction.

White cover built on a breaker foundation. Carcass consists of flexible fabric, tube compounded to resist action of steam and hot water.

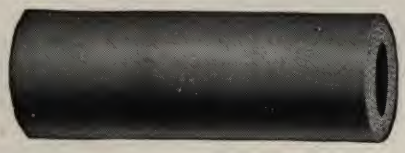
Supplied in lengths up to 50 feet with plain ends or integral soft rubber nozzle.

Size.....inches	½	¾	1	1¼
No. of Plies.....	4	4	4	4
Bursting Pressure.....pounds	1000	850	800	700
Working Pressure.....pounds	150	125	100	75
O.D.....inches	1¼	1 15/32	1 23/32	2
Weight per 100 Feet.....pounds	65	86	101	119

Sold from Standard Steam Hose List.

Standard Steam Hose List

Wrapped Construction



I.D. Inches	Per Foot 4-Ply	5-Ply	6-Ply	7-Ply	8-Ply	10-Ply
½	$.90	$1.05	....	....	....	....
¾	....	1.25	$1.40	....	....	....
1	....	1.50	1.75	$2.00	....	....
1¼	....	....	2.10	2.30	....	....
1½	....	....	2.40	....	$3.10	....
2	....	....	....	....	4.10	....
2½	....	....	....	....	....	$5.70

Republic Braided Asbestos Steam Hose

200 Pounds Working Pressure

Heavy asbestos cords braided into seamless plies are used in the carcass. Each ply is bonded and insulated with heat-resisting friction rubber.

Furnished in lengths up to 50 feet.

Size.....inches	½	¾	1	1¼	1½	2
Outside Diameter....inches	1 5/16	1 9/16	2⅛	2⅜	2⅝	3 9/16
Weight per 100 Feet.....lb.	53	92	137	163	202	253

Sold from Regular Steam Hose List.

Republic Double Cross Steam Hose

Recommended for general industrial service; for pile drivers, thawing coal, oil refineries, contractors, etc.

Wrapped and mandrel-cured. Body is constructed with plies of strong, closely-woven, heat-resisting duck. Equalized to balance expansion and contraction; frictioned and skimmed with long-lived and tenacious adhesion rubber. Retains its flexibility under severe operating conditions. Tough, abrasion-resisting cover protects hose from external wear.

Made in lengths up to 50 feet.

Size In.	Ply	Working Pressure Pounds	O.D. Inches	Wt. Lb. per 100 Ft.
½	4	125	1 5/32	50
½	5	150	1 9/32	58
¾	4	100	1½	72
¾	5	125	1 19/32	83
¾	6	150	1 11/16	94
1	4	75	1¾	83
1	5	100	1 27/32	99
1	6	125	1 15/16	113
1¼	6	100	2 3/16	131
1¼	7	125	2 9/32	148
1¼	8	150	2⅜	164
1½	6	100	2 15/32	157
1½	7	125	2 9/16	175
1½	8	150	2 21/32	197
2	8	125	3⅛	238

Sold from regular steam hose list.

Republic Tower Steam Hose

Wrapped Construction

Designed for general service where maximum pressures are not sustained and heat conditions not severe.

Wrapped construction, mandrel-cured. Reinforced with special, high tensile, close-woven duck. Heat-resisting tube and long-wearing cover.

Plain rubber cover, or wire wound, as specified.

Size In.	Ply	Working Pressure Pounds	O.D. Inches	Wt. Lb. per 100 Ft.
1/2	4	75	1 5/32	43
1/2	5	100	1 1/4	51
3/4	4	75	1 3/8	62
3/4	5	100	1 15/32	73
3/4	6	125	1 9/16	87
1	4	60	1 5/8	76
1	5	90	1 23/32	87
1	6	110	1 13/16	99
1 1/4	6	90	2 3/32	123
1 1/4	7	100	2 3/16	139
1 1/4	8	125	2 9/32	155
1 1/2	6	75	2 11/32	140
1 1/2	7	100	2 7/16	159
1 1/2	8	125	2 17/32	176
2	8	100	3 1/16	227

Sold from regular Steam Hose list.

Republic Acetylene and Oxygen Hose

Molded and Braided Construction

Corrugated; designed for welding and cutting service. Lightweight, flexible, easy to handle. Will not kink or become flattened or permanently distorted under abusive operating conditions.

Tube is compounded to resist destructive action of gas and solvents incidental to operation. Abrasive-resistant cover.

Style 20, for acetylene gas, has red cover. Style 10 with black cover is for oxygen.

Made in continuous lengths up to 500 feet, 3/16-inch, 1 braid; 1/4, 5/16 and 3/8-inch, 2 braid.

Prices upon request.

Wrapped Construction

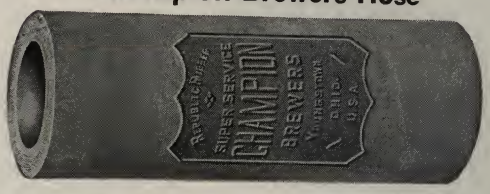
Smooth finished, plain wrapped cover of abrasive-resisting rubber. Mandrel-cured. Plies consist of six layers of light sheeting impregnated with friction rubber and firmly bonded into a light flexible structure easy to handle and free from kinking and distortion. Tube is free from pitting or flaking.

Made in two colors: red for acetylene, and black for oxygen.

Furnished in 25 and 50-foot lengths in 1/4, 5/16, and 3/8-inch inside diameters, 6-ply construction.

Prices upon request.

Champion Brewers Hose



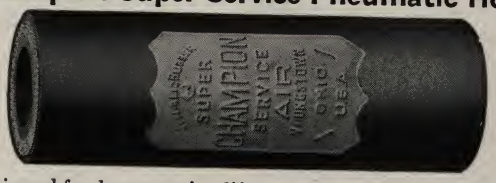
For conducting beer and other alcoholic beverages at varying degrees of temperature. Extra thick, smooth, sanitary, tasteless and odorless white rubber tube.

Carcass consists of plies of heavy duck impregnated and skimmed with red friction. The red or white cover is extra thick and tough—capped ends.

Lengths up to 50 feet.

Size Inches	No. of Plies	Pressure, Lb. Burst-ing	Pressure, Lb. Work-ing	O.D Inches	Wt., Lb. per 100 Ft.
1	4	900	225	1 25/32	100
1 1/4	4	750	175	2 1/32	117
1 1/4	5	900	225	2 1/8	129
1 1/2	4	650	150	2 9/32	138
1 1/2	5	800	200	2 3/8	150
2	5	700	175	2 7/8	187
2	6	800	200	2 31/32	204

Champion Super Service Pneumatic Hose



Designed for long service life under the severest operating conditions. Wrapped construction with carcass built up with plies of closely woven duck.

Tube consists of highest quality oil resisting rubber stock capable of withstanding the deteriorating effects of warm lubricating oil which gets into the hose from the compressor and lubrication through the line. The heavy, tan colored cover is of a special composition.

Lengths of 50 feet.

Size In.	No. of Plies	Pressure, Lb. Bursting	Pressure, Lb. Working	O.D. In.	Wt., Lb. per 100 Ft.
1/2	4	800	175	1	30
3/4	4	1200	225	1 1/2	66
3/4	5	1400	250	1 9/16	74
1	5	1200	225	1 13/16	90
1 1/4	5	1000	200	2 1/32	106
1 1/2	5	850	175	2 11/32	122
1 1/2	6	1000	200	2 13/32	135

Republic Tower Pneumatic Hose

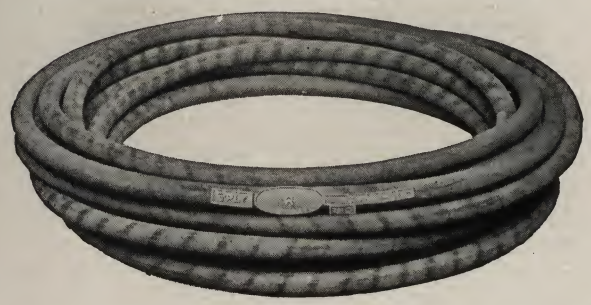
Oil resisting tube. Strong braided cord plies are impregnated and completely imbedded in a resilient friction rubber which binds the body into a composite structure having high bursting and working pressure.

Tough brown cover with cut and wear-resisting properties for severe service in shops, mines, quarries, etc.

Furnished in continuous lengths up to 500 feet on sizes to 1-inch, 3-braid; larger hose furnished in 300-foot rolls.

Size In.	No. of Braids	Pressure, Lb. Bursting	Pressure, Lb. Working	O.D. In.	Size In.	No. of Braids	Pressure, Lb. Bursting	Pressure, Lb. Working	O.D. In.
3/8	2	1000	225	25/32	3/4	3	1100	250	1 9/32
3/8	3	1100	250	29/32	1	3	950	200	1 1/2
1/2	2	850	200	29/32	1 1/4	3	675	150	1 3/4
1/2	3	1250	275	1 1/32	1 1/2	3	575	125	2 1/32
3/4	2	700	175	1 5/32	...	.	....	...	...

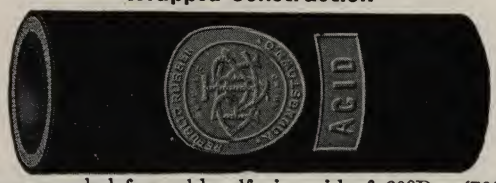
No. 2847 Republic Garage Air Hose



A fine red tube, friction and cover. Tube and cover are heavy, being especially constructed for air lines in garage and curb air stations. In 5-ply sizes ¼, 5/16, ⅜ and ½ inches; 6-ply sizes, ⅜ and ½ inches.

Republic Acid Hose

Wrapped Construction



Recommended for cold sulfuric acid of 60°Be. (78% by weight) concentration; 50% phosphoric acid; hydrochloric, hydrofluoric, and similar acids in any concentration; also many other weaker acids and chemical salt solutions at temperatures up to 150°F., as well as caustic soda and other alkalies in any concentration.

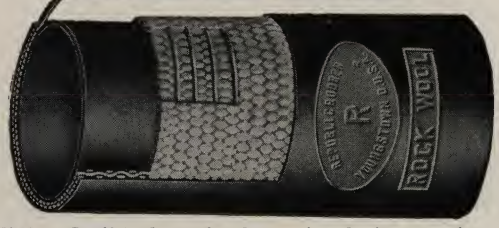
Extra thick rubber tube, 3/16 inch, specifically compounded, and amply reinforced with plies of heavy duck to prevent kinking and to resist pressure.

Lengths up to 50 feet. Ends capped.

Size In.	No. of Plies	Pressure, Lb. Bursting	Pressure, Lb. Working	O.D. In.	Wt., Lb. per 100 Ft.
¾	4	600	150	1⅜	53
1	4	600	150	1 13/16	84
1¼	4	500	125	2 1/16	98
1½	4	500	125	2 11/32	118
1½	5	550	135	2 7/16	131
2	4	450	110	2 27/32	147
2	5	500	125	2 15/16	165
2½	4	400	100	3 11/32	179
2½	5	450	110	3⅞	199

Republic Rock Wool Home Insulating Hose

Wire Interwoven Construction



A light, flexible hose for home insulation service where rock wool is blown between walls and ceilings during or after construction. This hose is designed to meet the highly abrasive effects of rock wool. A spiral of spring steel reinforcement is interwoven with cotton into the body of the hose to prevent kinking and collapse.

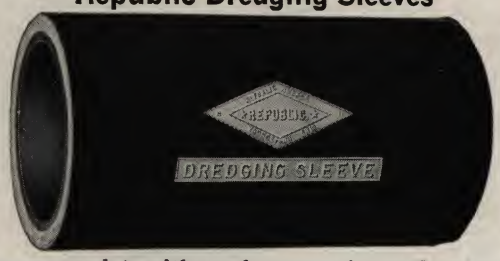
Tough, wear-resisting cover provides protection against wear from dragging over walls, across sills and sides of buildings.

Furnished in lengths up to 50 feet.

Size	inches	2	2½	3
Outside Diameter	inches	2⅝	3 3/32	3⅝
Weight per 100 Feet	pounds	105	131	195

Prices upon application.

Republic Dredging Sleeves



Strong enough to withstand constant internal pressure and the shocks and surges incidental to dredging operations. Will withstand the grinding motion of waves and shifting pontoons and also the wear and tear of sand and rock passing through the line. For light sand dredge service 3/16-inch gage may be specified on the smaller diameter sleeves. For larger sleeves and heavy abrasive materials, heavier gages are recommended. A strip of fabric is vulcanized over the cover at each end to prevent clamps from injuring the hose.

Inside Diameter ..... inches	6–8	10	12–18	20–22	‡26
Plies	6–8	8–10	10–12	12–14	12–14
*Tube ..... inches	3/16	3/16	¼	¼	⅜
*Cover ..... inches	1/16	1/16	1/16	3/32	3/32
†Tube ..... inches	¼	¼	⅜	⅜	½
†Cover ..... inches	1/16	1/16	3/32	3/32	⅛

*For fine sand. †For sharp sand, abrasive materials. ‡And larger.

Prices upon application.

Republic Sand Suction Hose

Smooth Bore

For dredging operations in river harbors and inland waterways. Heavily constructed tube consists of an abrasion-resisting rubber compound. Internal reinforcement and resistance provided by means of a helix of heavy wire imbedded in rubber and surrounded by many plies of heavy duck of proper construction to give strength and flexibility. An additional ply of duck is applied at the end over the cover as protection against damage from clamps.

The minimum thickness of the tube is ¼-inch and in the larger sizes it is ⅜ inch and over. For extra heavy service the ½-inch tube thickness is recommended.

Furnished with either plain or enlarged ends to fit pipe nipples. To prevent wear of the tube directly back of the nipple, building the hose to the outside of the nipple is recommended.

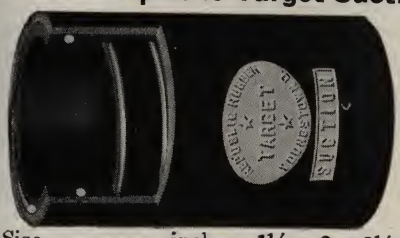
Republic All Service Paint Spray Hose

A lightweight, flexible, braided hose for use on paint spraying apparatus. Oil-resisting cover is built to withstand service abuse. Tube compounded to resist turpentine and allied common paint thinners; not recommended for Pyroxylin lacquers or its solvents and thinners.

Made in continuous lengths. Prices upon request.

Size	inches	⅜	½	¾
Ply		2	2	2
Burst Pressure	pounds	800	800	700
Working Pressure	pounds	150	150	125
Outside Diameter	inches	25/32	29/32	1 5/32
Weight per 100 Feet	pounds	24	31	45

Republic Target Suction Hose



Smooth Bore

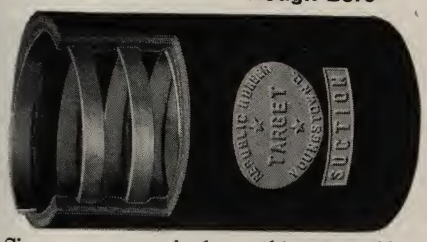
General purpose hose for contractor's use. Handles corrosive fluids.

Good wear-resisting cover.

Made in 10, 15, 20, and 25 foot stock lengths.

Size.....inches	1½	2	2½	3	4	5	6
O.D., Straight End.in.	2 1/16	2 9/16	3 1/16	3 9/16	4 5/8	6 3/32	7 3/16
O.D., Enlarged End.in.	2 7/16	2 15/16	3 7/16	4 1/16	5 1/8	6 5/8	7 13/16

Rough Bore



For general contracting service. Used for pumping excavations, flood projects and other clear water operations.

Made in 10, 15, 20, and 25 foot stock lgths.

Size.....inches	1½	2	2½	3	4	5	6
O.D., Straight End.in.	2 1/16	2 9/16	3 1/16	3 9/16	4 9/16	5 5/8	6 5/8
O.D., Enlarged End.in.	2 7/16	2 15/16	3 7/16	3 15/16	4 15/16	6 1/4	7 1/4

Prices upon application.

Republic Interwoven Wire Suction Hose

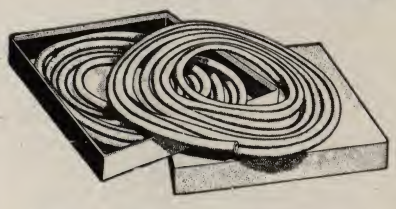
The carcass consists of a heavy weave of cord and round steel reinforcing wire, spirally interwoven, imbedded between the rubber tube and a tough wear-resisting cover. It is extremely flexible and strong, designed for rough usage without kinking. In the event of accidental crushing or flattening it can be rounded out and brought back into serviceable condition by means of a mallet or a hammer, using a block of wood to prevent injury to the cover. Made in any specified length up to 50 feet. Can be used for suction and also for discharge service up to 50 pounds.

Its construction is such that it can only be made in the nominal diameters throughout without enlargement, nor is it possible to build into the hose iron pipe nipples.

Size.....inches	1½	2	2½	3	4
Outside Diameter....inches	2 1/16	2 9/16	3 5/32	3 11/16	4 11/16

Prices upon application.

Pure Gum All Rubber Tubing



A high grade tubing, elastic and durable.

Adapted for sprays and as syringe tubing, also for the hardware and plumbing trade and for general service.

Made in the following sizes: 1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8 and 3/4 inch.

Per Pound.....

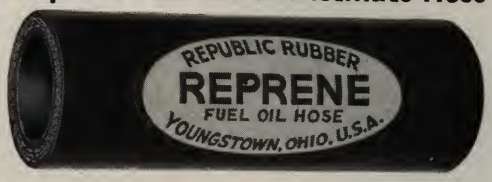
Special Ice Plant All Rubber Tubing

This tubing is especially made for ice plant service.

It is made from a red pure Para rubber and has a great amount of elasticity. Due to its stretching qualities it will fit over metal tubing from 7/32 to 3/8 inch o.d.

Per Foot.....

Reprene Fuel Oil or Distillate Hose



A molded 3-ply braided construction cord hose for conveying fuel oil or distillate from tank trucks to domestic storage tanks.

Built throughout with a synthetic rubber that is unaffected by oil, three heavy braids of twisted cord and an abrasion resisting cover of oil resisting synthetic rubber. Flexible and easily coiled on reels.

Made in continuous lengths to eliminate use of connecting couplings, in sizes up to 1½ inches. The 2-inch size can only be supplied in 50-foot lengths with a wrapped cover.

Size.....inches	¾	1	1¼	1½	2
Bursting Pressure.....pounds	...	600	500	400	400
Working Pressure.....pounds	...	150	125	100	100
Outside Diameter.....inches	...	1½	1¾	2 1/32	2 17/32
Weight per 100 Feet.....pounds	...	65	77	100	147

Reprene Gasoline Hose

Wire Interwoven—Rubber Covered

For dispensing gasoline. Light, flexible and easily handled. Approved by Underwriters' Laboratories.

Reinforced body of wire and strong yarn woven on a circular loom. Filler strands consist of alternate cords of cotton and high tensile wire firmly locked into position by the longitudinal warp yarn. Carcass is lined with a durable tube of synthetic rubber. Smooth inner surface offers little resistance to the flow. Outer rubber cover is compounded to resist abrasion and cracking from flexing and exposure to the elements.

Exposed ends of the wire are statically bonded with the couplings. Electrically tested. Coupled only with full flow One-Time couplings.

Made in any length up to 50 feet.

Size.....inches	¾	1	1¼
Outside Diameter.....inches	1¼	1 17/32	1 13/16
Weight per 100 Feet.....pounds	49	62	78

Prices upon application.

Reprene Tank Unloading Hose

Wire Interwoven—Rubber Covered

Used as a conduit between tank cars and underground storage tanks, loading and unloading tank wagons, etc. Approved by the Underwriters' Laboratories.

Durable synthetic tube prevents penetration or deterioration even when subjected to continuous contact with gasoline or oil. Filler strands consist of alternate cords of cotton and high tensile wire firmly locked into position by the longitudinal warp yarn. Has heavy abrasion and weather-resisting cover.

Made in lengths up to 50 feet.

Size.....inches	1½	2	2¼	2½	3	4
Outside Diameter....inches	2 3/32	2 9/16	2¾	3 3/32	3 9/16	4 5/8
Weight per 100 Feet..pounds	116	155	184	218	258	308

Prices upon application.

Labello Underwriters' Linen Hose

An approved labelled Underwriters' unlined linen fire hose for indoor service which meets requirements of the Underwriters in all respects.

Size.....inches	¾	1	1¼	1½	2	2½
Per Foot.....	....	....	....	....	....	....

Republic Relief Underwriters' Fire Hose

Single Jacket

A cotton rubber lined fire hose. Conforms to the physical and chemical specifications of the National Board of Fire Underwriters. Available in double and single jackets. The double jacket is recommended for fire protection where high pressures are involved and under severe conditions. The single jacket for lower pressure and less severe duty. Inspected by Underwriters before labeled. Furnished in 50 foot lengths.

	Single Jacket		Double Jacket	
Size In.	O.D. Inches	Wt. Lb. 100 Ft. Uncoupled	O.D. Inches	Wt. Lb. 100 Ft. Uncoupled
1½	1⅞	44.4	2	59.7
2	2⅜	57.4	2 9/16	75.5
2½	2 15/16	82.8	3⅛	108.5
3	3⅜	99.1	3⅝	145.1

Republic Fire Fighting Hose

Provar Processed—For Protection Against Mildew

Frequent attacks on the cotton jackets by mildew and rot makes the storage, as well as the wear and strain of fire fighting, a test of fire hose durability.

Provar treatment of jackets is permanent and will not wash out or lose its effectiveness after long service. Mildew cannot form on Provar Processed hose, even under conditions most favorable to its growth. Termites and vermin will not feed on or destroy the jackets which have received the Provar treatment. Its application in terms of service means longer life, greater economy and greater safety.

Republic Aero Mill Hose

Cotton—Rubber Lined

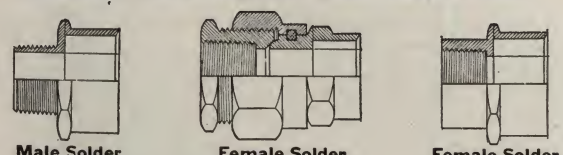
For mill yard and factory protection where pressures are not too high. Single jacket hose subjected to 250 pounds test pressure.

The double jacket hose affords greater protection against wear for service where hose is frequently used. Subjected to 300 pounds test pressure.

Supplied in 50-foot lengths.

	Single Jacket		Double Jacket	
Size In.	O.D. Inches	Wt. Lb. 100 Ft. Uncoupled	O.D. Inches	Wt. Lb. 100 Ft. Uncoupled
1	1 5/16	30.1	...	....
1¼	1 9/16	36.0	...	....
1½	1⅞	41.9	2	57.0
2	2⅜	53.8	2 9/16	70.0
2½	2⅞	69.2	3 1/16	92.7

Solder Couplings for Rex-Weld Hose



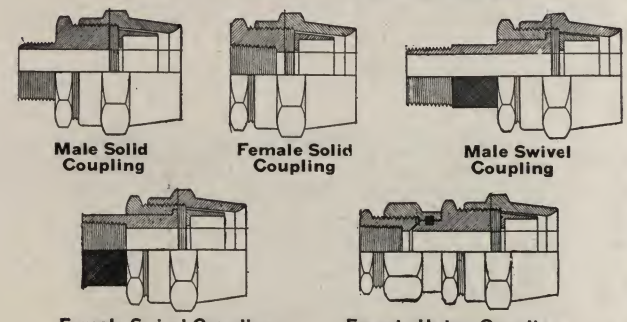
Male Solder Coupling — Female Solder Union Coupling — Female Solder Coupling

Coupling No. Male Solder	Female Solder Union	Female Solder	Hose I.D. Inches	I.P.T. Inches
8112	8202	8122	5/32	⅛
8113	8203	8123	3/16	⅛
8114	8204	8124	¼	¼
8115	8205	8125	5/16	¼
8116	8206	8126	⅜	⅜
8118	8208	8128	½	½
81112	82012	81212	¾	¾
81116	82016	81216	1	1
81120	82020	81220	1¼	1¼
81124	.....	81224	1½	1½
81132	.....	81232	2	2

Add prefix S to Solder Coupling part numbers when ordering for RW90 or RW91 Helical Corrugated Hose.

Rex-Tite Couplings for Rex-Weld Metal Hose

Solid, Swivel, and Union Couplings



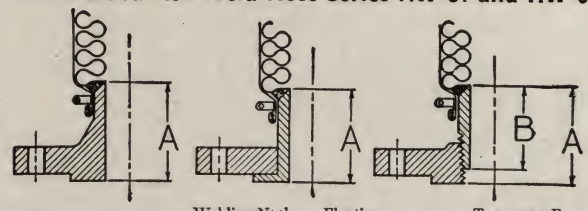
Male Solid Coupling — Female Solid Coupling — Male Swivel Coupling — Female Swivel Coupling — Female Union Coupling

Coupling No. Male Solid	Female Solid	Male Swivel	Female Swivel	Female Union	Hose I.D. Inches	I.P.T. Inches
8132	8142	8152	8162	8212	5/32	⅛
*8133	*8143	8153	8163	*8213	3/16	⅛
*8134	*8144	8154	8164	*8214	¼	¼
8135	8145	8155	8165	8215	5/16	¼
*8136	*8146	8156	8166	*8216	⅜	⅜
*8138	*8148	8158	8168	*8218	½	½
81312	81412	81512	81612	82112	¾	¾
81316	81416	81516	81616	82116	1	1
81320	81420	81520	81620	82120	1¼	1¼
81324	81424	81524	81624	.....	1½	1½
81332	81432	81532	81632	.....	2	2

*Denotes Couplings available for Helical RW-90 and RW-91 Hose. Add suffix S when ordering couplings for Spiral Hose.

Welded Flanges

For Braided Rex-Weld Hose Series RW-81 and RW-91



Hose I.D. Inches	Pipe Size Inches	Welding Neck Flange A Inches	Floating Flange A Inches	Threaded Fl. and Nipple A Inches	Threaded Fl. and Nipple B Inches
1	1	2 3/16	6	4⅛	4
1¼	1¼	2¼	6	4⅛	4
1½	1½	2 7/16	6	4 11/16	4½
2	2	2½	6	5¼	5
2½	2½	2¾	6	5¼	5
3	3	2¾	6	5 11/16	5½
3½	3½	2 13/16	6	6 3/16	6
4	4	3	6	6 3/16	6

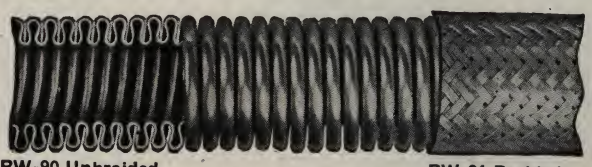
Rex-Weld Corrugated Flexible Metal Hose

RW-80 Unbraided — RW-81 Braided

Annular Corrugations

Fabricated from strip metal. Precision autogenous welding process produces weld stronger than tube. Has precision thickness, heavier wall structure and extreme flexibility.

Deep corrugations are spun into tube by the 50–50 principle of tube corrugation. Narrow or normal corrugations in flexible cold rolled steel or special alloy bronze free from zinc and consequent season cracking.



RW-90 Unbraided — RW-91 Braided

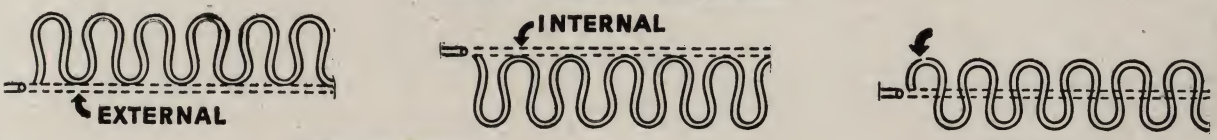
Spiral Corrugations

Stands up under high pressures, high temperatures, prolonged vibration, extreme contraction and expansion. It is seep-proof to gas, water, oil, air and searching fluids; highly rust-resistant and non-deteriorating.

Comes in one-piece continuous lengths up to 50 feet. No coupling of short lengths. No packing or brazing.

Tube sizes range from ⅛ to 4 inches inside diameter.

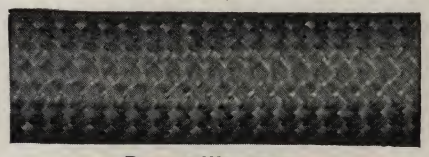
50-50 Principle of Corrugation



Customary Methods — 50-50 Method

The Rex-Weld 50-50 Principle of Corrugation requires only half as much working of the tube wall (bending the metal in forming the loops) as is required in other forming processes. The result is less weakening or thinning of tube.

Types of Braid



Beamed Wire Braid
For Normal Conditions

Braided Braid
For Extreme Working Pressures

Keystone Braid
For Abnormal Pressures

Rex-Weld has three types of braid to meet varying conditions and needs of extreme pressure applications.

The high tensile beamed wire for normal conditions. Wire specifications vary with the application needed.

Keystone braid resists abrasion and is for balanced strength of unusual pressures.

The braided braid of high tensile wire is for maximum resistance against extreme working or shock pressures.

Sizes and Specifications

RW-80, Inside Diameter.....in.		...	5/32	3/16	1/4	5/16	3/8	1/2	3/4	1	1 1/4	1 1/2	2	..	..	..	..
*RW-80, Outside Diameter.....in.		...	13/32	7/16	1/2	19/32	11/16	7/8	1 9/32	1 9/16	1 29/32	2 9/32	2 29/32	..	..	..	..
RW-90, Inside Diameter.....in.		1/8	...	3/16	1/4	5/16	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
*RW-90, Outside Diameter.....in.		9/32	...	11/32	15/32	9/16	11/16	13/16	1 1/4	1 5/8	1 15/16	2 3/8	2 29/32	3 7/16	3 15/16	4 5/8	5 1/8
†Min. Inside Radius of Bend Approximate Permanent Set.....	Bronze....in.	2 7/8	3	3 1/4	3 1/2	3 7/8	4 1/2	4 11/16	7 3/8	8	8 7/16	9	10	12	15	18 1/2	23
	Steel.....in.	3	3 1/2	3 3/4	3 11/16	4 5/8	5 1/8	5 1/2	8 3/8	9 1/8	10 1/2	10 7/8	11 7/8	14 1/4	17 7/8	22 3/4	30
††Min. Rec. Working Radius of Bend.....	Bronze.....in.	4	4 3/8	5	5 3/8	5 5/8	6	6 1/2	8	9 1/2	10 1/2	12	14 1/2	17 1/2	20	22 1/2	25 1/2
	Steel.....in.	4 7/8	5	5 1/4	5 7/8	6 1/2	7	8	10 1/2	13	15	17 1/2	22	27	31 1/2	36	41
Max. Bursting Pres. with Balanced Strength Single Beamed Wire Braid	Bronze lb. per sq. in.	14500	12500	11000	10500	7500	7000	5400	3500	2000	1650	1500	1000	§	§	§	§
	Steel lb. per sq. in.	14500	12500	11000	10500	7500	7000	5400	3500	2000	1800	1650	1150	§	§	§	§

*For outside diameter with single beamed wire braid add 1/16 inch.

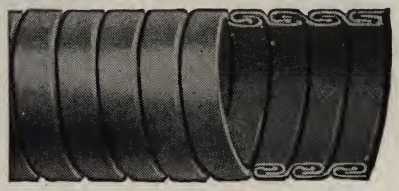
†Dimensions for narrow corrugations which is tubing in fully compressed state. Normal corrugation, tubing in semi-compressed, state, recommended only where flexibility after installation is relatively unimportant.

‡While tubing can be bent to smaller radius, tests show fatigue results in lessened service life when tubing is subjected to smaller working bending radius.

§Data supplied on application.

No. RT15 Rex-Tube Flexible Metal Hose

Interlocking Construction—For Heavy Duty Service



For handling steam at low and moderate pressures, for unloading and loading tankers and barges, steaming out tank cars, bituminous distributors and other hot process jobs.

Handles oils, greases, fats, hot tar, asphalt, etc. at any pressure within its rated capacity.

Made from heavy strip, galvanized steel or bronze, interlocking design with inner packing of high grade asbestos. Bronze hose is recommended for handling steam under pressure.

In ordering, state purpose for which hose is intended, and if flexibility is important, give required bending radius.

Conforms to U.S. Navy Specifications 34-H-11e.

	Per Foot							
I.D.....in.	½	¾	1	1¼	1½	2	2½	3
Bronze...	$.75	$1.25	$1.60	$2.25	$2.70	$3.50	$4.00	$5.50
Steel.....	.40	.60	.80	1.00	1.20	1.50	1.90	2.30
O.D....in.	21/32	31/32	1¼	1 9/16	1 13/16	2 5/16	2 13/16	3⅜
Metal Thick.in.	.020	.025	.025	.030	.034	.034	.034	.038

Lightweight interlocked hose made from metal not more than 25 per cent lighter than standard available at list prices.

Heavyweight interlocked hose available at list price plus 12½ per cent.

Sizes 4 to 12 inches can be supplied. Information and prices on request.

Special sizes not shown will take the price of the nearest larger listed size.

Type RT14 Rex-Tube Flexible Metal Hose

A perfect moisture resisting conduit for applications such as moderate pressure oil, water, etc. Ball bearing construction.

	Per Foot							
I.D.....inches	3/16	¼	5/16	⅜	½	¾	1	1¼
O.D.....inches	9/32	11/32	13/32	17/32	21/32	31/32	1 7/32	1½
Metal Thick.in.	.013	.018	.018	.020	.020	.024	.028	.028
Bronze.....	$.20	$.25	$.35	$.45	$.65	$.90	$1.25	$1.50
Steel.....	.12	.15	.20	.25	.35	.40	.60	.70
Ambrac.....	.27	.35	.47	.60	.85	...	....	....
Monel Metal...	.40	.50	.70	.90	1.30	...	....	.....
Stainless Steel.	.37	.45	.60	.75	1.00	...	....	....

Wire Braidings

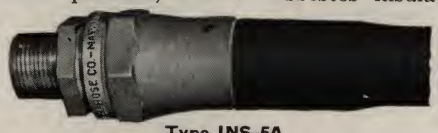
	Per Foot							
Hose I.D..inches	3/16	¼	5/16	⅜	½	¾	1	1¼
Max. Wire Diam...in.	.012	.012	.012	.012	.016	.016	.016	.016
Bronze.....	$.16	$.18	$.20	$.30	$.40	$.60	$.75	$.90
Steel.....	.14	.16	.17	.25	.30	.50	.60	.70
Tinned Bronze...	.18	.20	.22	.33	.44	....	....	....
Ambrac.....	.26	.29	.32	.48	.65	....	....	....
Monel Metal.....	.28	.32	.35	.53	.70	....	....	....
Stainless Steel...	.32	.36	.40	.60	.80	....	....	....

Special sizes not shown will take the price of the nearest larger listed size.

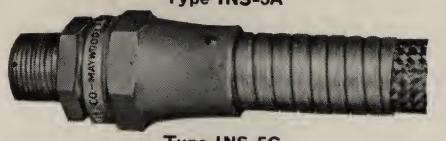
Rex Tube Flexible Bronze Gas Holder Hose

Interlocking Construction

For handling steam at low and moderate pressures. Maximum pressure, 425°F. Asbestos insulated with I.P.T. packed-on (heatproof) couplings attached.



Type INS-5A



Type INS-5C

Couplings furnished are male or female. Plain refers to couplings without ends; reinforced refers to couplings with reinforced ends.

Type INS-5A

Canvas cover.

I.D. In.	Per Foot	Couplings Plain per Set	Couplings Reinforced per Set
½	$.65	$4.00	$5.00
¾	.95	5.00	6.00
1	1.20	6.50	7.50

Type INS-5B

Bronze braid; canvas cover.

½	$.85	$4.50	$5.50
¾	1.25	5.75	7.00
1	1.50	7.50	9.00

Type INS-5C

Bronze braid cover.

½	$.75	$4.00	$5.00
¾	1.10	5.00	6.00
1	1.45	6.50	7.50

Type INS-5D

Bronze braid; bronze braid cover with spiral wire winding.

I.D. In.	Per Foot	Couplings Plain per Set	Couplings Reinforced per Set
½	$1.05	$4.50	$5.50
¾	1.525	5.75	7.00
1	1.90	7.50	9.00

Type INS-5E

Same as Type INS-5D, with spiral wire winding omitted.

½	$.95	$4.50	$5.50
¾	1.40	5.75	7.00
1	1.75	7.50	9.00

Spiral Wire Winding

For Types INS-5A, INS-5B, INS-5C and INS-5E

Hose I.D.....inches	½	¾	1
Per Foot.....	$.10	.125	.15

No. RT-20 Rex-Tube Ball Bearing Hose

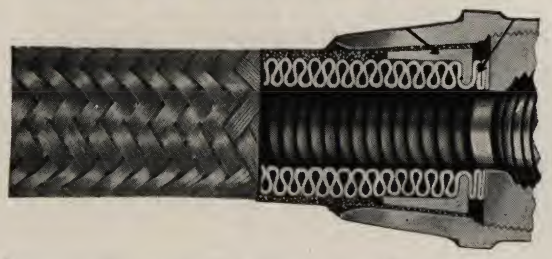
Wire Braided Jacket—For Rough Handling

Strip-ball bearing construction of galvanized steel or bronze. High grade asbestos packed. Metal braided (usually same alloy braid as required for hose is used for braid) and may be wire wrapped if required. Flexibility of braid provides extra strength.

Assembly pressure ratings vary, depending upon consistency of liquid to be handled. Used at high pressure for wide range of liquids as well as steam. Bronze hose is recommended for handling steam under pressure.

I.D. Hose..in.	3/16	¼	5/16	⅜	½	¾	1	1¼
Steel...per ft.	$.26	.31	.37	.50	.65	.90	1.20	1.40
Bronze..per ft.	.36	.43	.55	.75	1.05	1.50	2.00	2.40
Cplg. I.P.T...	⅛–¼	⅛–¼	¼–⅜	⅜	½	¾	1	1¼

Rex-Tite Re-Attachable Couplings

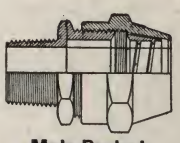


Mechanically applied without packing, welding, or brazing. Metal to metal seat. Split tapered sleeve locks tubing to form metal seat and secures braid. Bell mouth prevents localized strain.

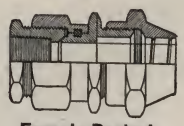
Coupling is pressure and heatproof. Can be reused.

Prices and additional information upon request.

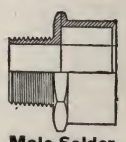
Brass Couplings for Rex-Tube Flexible Metal Hose



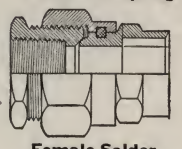
Male Packed Coupling



Female Packed Union Coupling



Male Solder Coupling



Female Solder Union Coupling

For No. RT15 Hose

No. 1 Packed

(Heatproof) reattachable brass couplings. Available in malleable iron and special alloys also. Use packed couplings for temperatures over 250°F.

No. Solid Male	No. *Female	I.P.T. Hose I.D. In.	Attached Solid Male Each	Attached *Female Each	Loose Solid Male Each	Loose *Female Each	Reattaching Male or Female Each
1518	1528	½	$1.60	$2.40	$.61	$1.14	$1.13
15112	15212	¾	2.00	3.00	.96	1.79	1.13
15116	15216	1	2.60	3.90	1.40	2.60	1.25
15120	15220	1¼	3.40	5.10	1.93	3.58	1.50
15124	15524	1½	4.00	6.00	2.28	4.23	1.75
15132	15532	2	5.20	7.80	3.15	5.85	2.00
15140	15540	2½	7.60	11.40	4.90	9.10	2.50
15148	15548	3	9.60	14.40	6.30	11.70	3.00
15164	15564	4	11.00	17.50	....	.....	3.50
15180	.....	5	18.00	.....	....	.....	5.00
15196	.....	6	24.00	.....	....	.....	6.00
151128	.....	8	30.00	.....	....	.....	9.00
151160	.....	10	42.00	.....	....	.....	11.00
151192	.....	12	56.00	.....	....	.....	15.00
			No. 1 Soldered				
1538	1548	½	$.79	$1.46	$.23	$.68	$.68
15312	15412	¾	1.23	2.28	.38	1.13	1.00
15316	15416	1	1.75	3.25	.69	2.06	1.25
15320	15420	1¼	2.10	3.90	.81	2.44	1.50
15324	15624	1½	2.80	5.20	1.06	3.19	2.00
15332	15632	2	3.85	7.15	1.63	4.88	2.50
15340	15640	2½	5.25	9.75	2.38	7.13	3.00
15348	15648	3	6.65	12.35	3.13	9.38	3.50
15364	15664	4	7.50	12.00	5.00	9.50	3.50
15380	.....	5	11.00	.....	8.00	....	5.00
15396	15696	6	14.00	30.00	10.00	26.00	6.00
153128	.....	8	20.00	.....	14.00	.....	9.00
153160	.....	10	36.00	.....	27.50	.....	11.00
153192	.....	12	45.00	.....	36.00	.....	15.00

For No. RT14 Hose

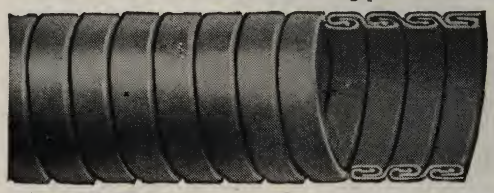
No. 1 Packed

(Heatproof) reattachable brass couplings. Use packed couplings for temperatures over 250°F

No. Male	No. Female	Hose I.D. In.	Cplg. IPT In.	Attached Male Each	Attached Female Each	Loose Male Each	Loose Female Each	Reattaching Male or Female Each
15142	1522	¼	⅛	$1.10	$1.65	$.44	$.81	$.75
1514	1524	¼	¼	1.10	1.65	.44	.81	.75
15152	1525	5/16	¼	1.20	1.80	.525	.975	.75
15153	1525L	5/16	⅜	1.20	1.80	.525	.975	.75
1516	1526	⅜	⅜	1.40	2.10	.525	.975	1.00
1518	1528	½	½	1.60	2.40	.61	1.14	1.125
15112	15212	¾	¾	2.00	3.00	.96	1.79	1.125
15116	15216	1	1	2.60	3.90	1.40	2.60	1.25
15120	15220	1¼	1¼	3.40	5.10	1.925	3.575	1.50
				No. 1 Soldered				
15331	1542	3/16	⅛	$.44	$.81	$.125	$.375	$.375
1533	1542L	3/16	¼	.44	.81	.125	.375	.375
15342	1544L	¼	⅛	.44	.81	.125	.375	.375
1534	1544	¼	¼	.44	.81	.125	.375	.375
15343	1545	5/16	¼	.525	.975	.15	.45	.45
15345	1545L	5/16	⅜	.525	.975	.15	.45	.45
15361	1546L	⅜	¼	.61	1.14	.19	.56	.50
1536	1546	⅜	⅜	.61	1.14	.19	.56	.50
1538	1548	½	½	.79	1.46	.225	.675	.675
15312	15412	¾	¾	1.225	2.275	.375	1.125	1.00
15316	15416	1	1	1.75	3.25	.69	2.06	1.25
15320	15420	1¼	1¼	2.10	3.90	.81	2.44	1.50

*Female union coupling sizes ½ to 1¼ inches inclusive; female swivel coupling sizes 1½ inches and up.

Rex-Tube Interlocked Type Exhaust Hose



Made from heavy galvanized strip steel with welded-on standard forged steel flanges.

No. RT-15 has inner packing of high grade asbestos.

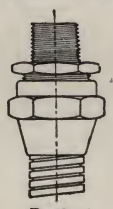
Hose I.D. In.	Min. Rec. Lengths, In. F. to F. of Flanges — To Be Installed: Straight	30°	45°	90°	Min. Bend. Radius Inches	Max. Axial Elongation Inches per Ft.	Max. Twist for Matching Bolt Holes Inches
1	12	12	15	24	8	⅜	1 3/16
1¼	12	15	18	30	10	⅜	1⅜
1½	12	16	21	32	12	⅜	1½
2	15	21	27	36	14	⅜	1⅞
2½	15	24	30	39	16	⅜	2⅛
3	15	27	33	42	18	⅜	2⅜
4	18	30	42	60	25	7/16	1½
5	18	36	48	78	30	7/16	1 11/16
6	24	42	54	90	36	7/16	1⅞
8	30	52	69	126	42	½	2¼
10	36	66	90	144	48	½	1⅞
12	48	72	96	162	54	½	2¼

For minimum recommended lengths with other fittings, add twice the length of each fitting to those lengths of hose shown.

RT-15 Diesel Engine Exhaust Hose Units can be supplied in any lengths, with U.T.D. (Pressure Type) welded flanges or with heat-proof, packed couplings.

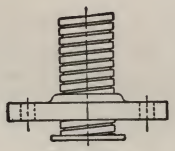
Length data applies only to units with welded flanges.

Rex-Tube Interlocked Type Exhaust Fittings

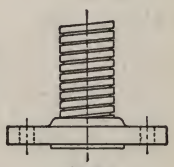


Packed Heatproof I. P. T. Coupling

Steel I. P. T. Nipple



Floating Flange

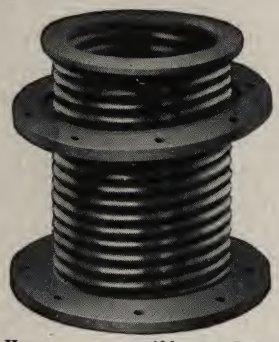


Fixed Flange

Hose I.D. In.	Male Heatproof Length Inches	Male Heatproof Weight Pounds	Male Nipple Welded On Length Inches	Male Nipple Welded On Weight Pounds	Flange Floating and Fixed Weight Pounds
1	3	1	2	.4	2.5
1¼	3¼	1.5	2¼	.5	3
1½	3½	2	2¼	.7	3.5
2	3¾	2.8	2¼	.9	5.5
2½	5¼	5	2¾	1.6	7.5
3	5¼	5.3	2¾	2.2	9
4	5¼	8.5	3	3.2	14
5	5¾	11	3	4.4	16
6	6¼	14	5½	9.5	20
8	6½	23	6	13.5	32
10	8	44	6	17	47
12	8½	60	6½	25	68

Hose I.D. In.	Female Welded on Length Inches	Female Welded on Weight Pounds	Male with Flange Length Inches	Male with Flange Weight Pounds	Female with Nipple Length Inches	Female with Nipple Weight Pounds
1	1¾	.5	3¼	3	2¾	.7
1¼	2¼	.7	3½	4.5	3¼	.9
1½	2¼	1	3¾	5	3¼	1.3
2	2½	1.5	4	7.8	3¾	2
2½	3	2	5½	12	4½	2.8
3	3	3	5½	13.3	4¾	4.3
4	3½	4.5	5½	21.5	5¼	6.5
5	4¼	9.5	6	26	6	12.5
6	4¼	11	6½	33	6	15.5
8	4¾	15	7	53	6¾	21.5
10	6¼	33	8½	87	8½	42
12	6¼	47	9	124	9	62

All lengths and weights are approximate.



No. RW-89 Rex-Weld Diesel Exhaust Hose

A one-piece, gas-tight, leak-proof, all-metal flexible tubing. Durable, more flexible and highly resistant to vibration fatigue; it is designed to meet the requirements of the diesel industry.

On belt-driven diesel installations the Rex-Weld flexible units permit moving the engine on the slotted engine mounting for belt take-up without disconnecting or rebuilding the stack.

Hose I.D. In.	†Minimum Recommended Lengths of Hose to Be Installed, In. *Straight	‡30°	‡45°	‡90°	Min. Bend Radius In.
1	10	2	2⅛	4	1¾
1¼	11	2⅛	2¼	4½	2¾
1½	11	2½	2⅞	5½	3¼
2	12	3⅛	3½	6¾	4⅛
2½	12	3¼	3¾	7¼	4¾
3	13	3⅞	4⅛	8	5⅛
3½	13	5	5 3/16	10	7
4	14	6	6¼	12	8

*Based on ⅛ inch vibration; can be supplied in any length.
†Does not include fittings.
‡Degree lengths do not provide extensions for vibration, etc.
Maximum axial elongation, 2 per cent of hose length. Allowable twist, none.

Brass Hose Nipples

When ordering, state number and thread wanted on each end.

No. 91

No. 92

Size Inches	No. 91 Male per Dozen	No. 92 Male and Female per Dozen
½	$3.50	$3.50
¾	7.00	7.15
1	6.00	6.50
1¼	9.00	*9.00
1½	10.00	*10.00
2	*14.00	*14.00
2½	28.00	*28.00
3	*40.00	*40.00
3½	*50.00	*50.00
4	*75.00	. . . .

*Made to order only.

No. 94 Hose Bushings

Bushing is of cast brass. Hexagonal. The following sizes are carried in stock. Sizes not listed can be furnished and are made up to order only.

Thread, Inches Male	Female	Per Dozen
¾ H.P.T. x	½ I.P.T.	$6.50
1 I.P.T. x	¾ H.P.T.	6.50
1¼ P.T. x	1 P.T.	10.00
1½ P.T. x	1¼ P.T.	12.00

Brass Hose Reducers

One-half inch sizes furnished iron pipe thread; ¾ and 1-inch sizes furnished hose thread; sizes larger than 1-inch, thread data must always be sent with order.

Three-fourth and 1-inch sizes are hexagonal, without lugs.

Size In.	Per Dozen
¾x ½	$6.50
1 x ¾	6.50
1¼x ¾	8.00
1¼x1	10.00
1½x ¾	11.50
1½x1	11.50
1½x1¼	12.00
2 x ¾	13.00
2 x1	14.00
2 x1¼	16.00
2 x1½	18.00
2½x ¾	20.00
2½x1	22.00
2½x1¼	23.00
2½x1½	24.00
2½x2	26.00
3 x2	30.00
3 x2½	36.00

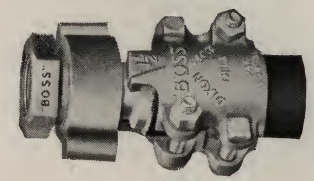
¾ and 1-Inch No. 9301

1¼-Inch and Larger No. 93

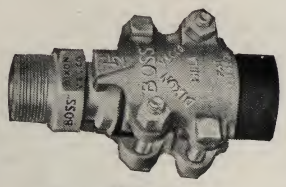
Boss Cadmium-Plated Hose Couplings

W-16
Female Coupling with I.P.T. Spud and Washer
Size ¾ Inch and Smaller
2-Bolt Clamp

MX-16
Male Coupling with I.P.T.
—Size ¾ Inch and Smaller
2-Bolt Clamp



W-16
Female Coupling with I.P.T. Spud and Washer
Size 1 Inch and Larger
4-Bolt Clamp



MX-16
Male Coupling with I.P.T.
—Size 1 Inch and Larger
4-Bolt Clamp

Heavily reinforced rustproof clamps with extra gripping surface and extended fingers to engage collar on stem.

Do not order in sets. One length of hose requires two couplings. Specify size and number of male or female desired.

Hose and I.P.T. Size Inches	Female Coupling Complete Each	Female Coupling Weight Pounds	Male Coupling Complete Each	Male Coupling Weight Pounds
¼	$.90	.38	$.52	.23
⅜	1.10	.57	.65	.37
½	1.40	1	.80	.65
¾	2.40	2.8	1.20	1.3
1	2.65	3.6	1.45	2.6
1¼	4.40	6.3	2.30	3.9
1½	4.60	6.8	2.80	4.7
2	7.25	10.7	4.10	7.5
2½	14.00	19	8.00	12.7
3	17.50	26	11.00	18
4	33.00	49	18.75	33

Parts

Hose and I.P.T. Size Inches	Female Stem Each	Female Nut Each	Female Spud Each	Composition Washers per 100	Male Stem Each
¼	$.25	$.25	$.30	$.80	$.40
⅜	.30	.30	.30	1.00	.45
½	.40	.35	.35	1.65	.50
¾	.75	.60	.60	2.50	.75
1	.80	.60	.60	2.50	.80
1¼	1.25	1.00	1.00	2.85	1.10
1½	1.30	1.00	1.00	3.00	1.30
2	1.85	1.60	1.80	4.40	2.00
2½	3.75	3.00	3.40	5.70	4.00
3	4.50	4.00	4.25	6.30	6.00
4	7.00	8.00	9.00	7.15	8.75

Regular Clamps

Marked Size Inches	Each	Fits Hose O.D. Inches	Marked Size Inches	Each	Fits Hose O.D. Inches
¼	$.20	9/16 to 11/16	1½	$1.50	2¼ to 2 7/16
⅜	.20	11/16 to 13/16	2	2.10	2¾ to 3 1/16
½	.30	15/16 to 1 1/16	2½	4.00	3½ to 3 15/16
¾	.45	1 5/16 to 1½	3	5.00	4 1/16 to 4 7/16
1	.65	1 11/16 to 1 27/32	4A	*10.00	4⅞ to 5 5/16
1¼	1.20	2 1/16 to 2¼	. . .	. . . . .	. . . . .

Oversize Clamps

Marked Size Inches	Each	Fits Hose O.D. Inches	Marked Size Inches	Each	Fits Hose O.D. Inches
7/16	$.20	13/16 to 15/16	1⅝	$1.50	2 15/32 to 2 23/32
⅝	.30	1 3/32 to 1 7/32	2⅛	2.10	3 3/32 to 3 7/16
⅞	.45	1 17/32 to 1⅝	4B	*10.00	5⅜ to 6 3/16
1⅛	.65	1⅞ to 2 1/16	. . .	. . . . .	. . . . .

*Clamp—3 sections, 6 bolts.

If 2-bolt clamps are desired on couplings sizes 1 to 2 inches inclusive, they can be furnished when specified.

Dix-Lock Quick-Acting Air Hose Couplings

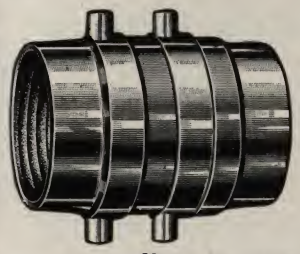
Male Head—Hose End

Female Head—Hose End

Any Dix-Lock male coupling may be connected to any female coupling, regardless of the size thread or hose shank on either type. Dix-Lock couplings interchange perfectly with Bowes and Dalbo fittings.

Female locking head is rigid member; male connection has locking sleeve and internal spring. Both male and female types are furnished with male or female pipe threads, or with shank for inserting into hose. Specify when ordering.

Size In.	Male Head, Hose End: Style DKB Brass No.	Style DKS Steel No.	Each	Wt. Lb. per 100	Female Head, Hose End: Style DKB Brass No.	Style DKS Steel No.	Each	Wt. Lb. per 100
⅜	QB-2	QM-2	$2.00	50	QB-21	QM-21	$1.60	33
½	QB-3	QM-3	2.00	55	QB-22	QM-22	1.60	36
¾	QB-4	QM-4	2.00	70	QB-23	QM-23	1.60	50
1	QB-5	QM-5	3.00	90	QB-24	QM-24	2.40	60
	Male Head, Male I.P.T.				Female Head, Male I.P.T.			
¼	QB-40	QM-40	$2.00	55	QB-60	QM-60	$1.60	32
⅜	QB-41	QM-41	2.00	60	QB-61	QM-61	1.60	33
½	QB-42	QM-42	2.00	65	QB-62	QM-62	1.60	35
¾	QB-43	QM-43	2.00	70	QB-63	QM-63	1.60	40
1	.....	.....	....	..	QB-64	QM-64	2.40	50
	Male Head, Female I.P.T.				Female Head, Female I.P.T.			
¼	QB-80	QM-80	$2.00	55	QB-100	QM-100	$1.60	39
⅜	QB-81	QM-81	2.00	60	QB-101	QM-101	1.60	41
½	QB-82	QM-82	2.00	65	QB-102	QM-102	1.60	42
¾	QB-83	QM-83	2.00	70	QB-103	QM-103	1.60	45
1	.....	.....	....	..	QB-104	QM-104	2.40	55



Standard Expansion Ring Couplings

For unlined linen or light cotton rubber lined mill hose. Iron or brass.

Tail piece is expanded into the swivel. In ordering, state kind of hose to be used on and style of thread desired.

No. 1 for Unlined Linen Hose

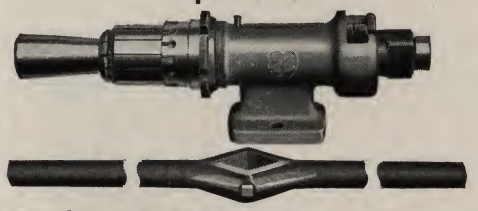
Size.....in.	1	1¼	1½	2	2½	2½
Tail No.....	0	1	1	1	0	1
Fits Hose O.D.....in.	1⅛	1 7/16	1 11/16	2 3/16	2 41/64	2¾

No. 2 for Cotton Rubber Lined Mill Hose

Size.....in.	1	1	1¼	1½	2	2½
Tail No.....	2	4	2	2	2	2 15/16
Fits Hose O.D.....in.	1⅜	1 7/16	1 9/16	1⅞	2 5/16	2 15/16

Prices upon application.

No. 405 Elkhart Unbreakable Coupling Expanders

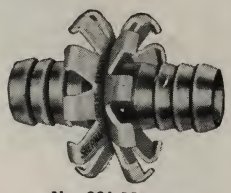


Manganese bronze body for severe service. Segments are unbreakable, special design makes them free from the body, regardless of the amount of expansion put on them. Steel stop collar is securely fastened to screw, preventing damage.

Size.....in.	1¼	1½	2	2½	3
Each.....	$20.00	25.00	30.00	35.00	45.00
Size.....in.	3½	4	4½	5	6
Each.....	$55.00	65.00	75.00	90.00	105.00

Sherman Long-Grip Water Hose Couplings and Menders

No. 820 Coupling



No. 821 Mender

Made entirely of plastic except for fingers, which are rust-proofed metal. Colorful; easily identified. No. 820 Couplings packed 1 dozen per carton, weighing 1¼ pounds. No. 821 Menders, 2 dozen per carton, weighing 1¾ pounds.

Size.....inches	½	⅝	2
No. 820, Coupling.....per dozen	$4.18	4.18	4.18
No. 821, Mender.....per dozen	$1.26	1.26	1.26

Sherman Hose Couplings

Heavy Wrought Brass

This heavy wrought brass coupling with accurate machine-cut threads, deep, clean corrugations and fine appearance, comprise the universal standard of the very highest quality in garden hose couplings.

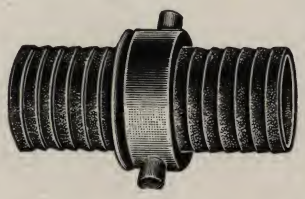
Approximate weight per dozen, 2 pounds.

Size.....inches	½	⅝	¾	1
Per Dozen.....	$3.14	3.14	3.14	6.60

No. 89 Cast Brass Water Hose Couplings

Always supply thread information when ordering to avoid delay.

Sizes 1¼, 1½, 2 and 2½ inches have lugs on female half only. Sizes 3, 3½, 4, 5, 6 and 8 inches have lugs on both halves.



Size In.	Per Dozen: Full Sets	Half Couplings Female	Half Couplings Male
1¼	$10.00	$6.67	$5.00
1½	14.00	9.33	7.00
2	24.00	16.00	12.00
2½	48.00	32.00	24.00
3	75.00	50.00	37.50
3½	120.00	80.00	60.00
4	150.00	100.00	75.00
5	250.00	167.50	125.00
6	500.00	333.33	250.00
8	600.00	400.00	300.00

No. 90 Cast Brass Steam Hose Couplings

Furnished with semi-finished swivels, recessed for washers. Tailpieces are heavy, extra long with chamfered ends.

All sizes furnished with iron pipe thread unless otherwise specified.

Size In.	Per Dozen: Full Sets	Half Couplings Female	Half Couplings Male	Size In.	Per Dozen: Full Sets	Half Couplings Female	Half Couplings Male
¼	$15.00	$10.00	$7.50	1¼	$24.00	$16.00	$12.00
⅜	15.00	10.00	7.50	1½	30.00	20.00	15.00
*½	15.00	10.00	7.50	2	42.00	28.00	21.00
¾	15.00	10.00	7.50	2½	72.00	48.00	36.00
1	18.00	12.00	9.00	3	148.00	98.67	74.00

*Furnished with ¾-inch I.P.T. unless ½-inch is specified.

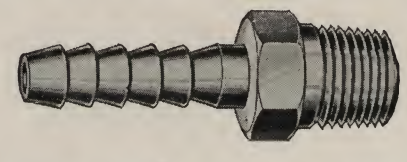
No. 895 McDonald Jiffy Quick Bronze Hose Couplings

For attaching truck tank hose faucet. Makes positive leakproof connection.

For Hose Size.....inches	1½	2
No. 895, Complete.....each	$5.04	$6.37
Adaptor Only.....each	.90	1.40
Swivel Only.....each	4.14	4.97

No. 119 Sherman Air Hose Nipples

Male Pipe Thread—Corrugated Hose End

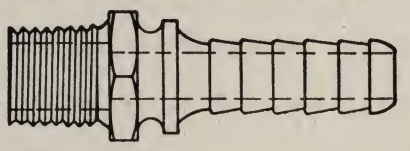


This coupling is made from brass rod. Used for attaching air nozzles, spray guns, and other air equipment to hose.

Weight per dozen, one pound.

I.P. Size.inches	⅛	¼	¼	¼	⅜	⅜
Hose....inches	¼	¼	⅜	½	⅜	½
No. 119. per 100	$14 00	14.00	21.00	22.00	21.00	25.00

No. 3500 Steel Hose Nipples



This nipple is machined from cold-drawn steel bar, and has a collar in back of hexagon shoulder for wiring method of attaching hose. All No. 3500 nipples are case hardened for increased strength.

Size Hose In.	Size I.P. Thread Inches	Each	Size Hose In.	Size I.P. Thread Inches	Each	Size Hose In.	Size I.P. Thread Inches	Each
¼	¼	$.45	⅜	½	$.50	¾	½	$.90
¼	⅜	.45	½	¼	.50	¾	¾	.90
⅜	¼	.45	½	⅜	.50	1	1	1.35
⅜	⅜	.45	½	½	.50	1	¾	1.35

King Steel Nipples

A practical nipple for use on air hose. Ends carefully rounded to prevent injury to tube of hose. Machined from cold drawn steel bar. Furnished either plain or cadmium plated.

Size Hose In.	Size I.P. Thread, In.	Plain Each	Cadmium Plated Each	Size Hose In.	Size I.P. Thread, In.	Plain Each	Cadmium Plated Each
⅜	¼	$.50	$.55	½	½	$.60	$.65
⅜	⅜	.50	.55	¾	½	1.00	1.10
⅜	½	.60	.65	¾	¾	1.00	1.10
½	¼	.50	.55	1	1	1.50	1.60
½	⅜	.50	.55	...	...	....	....

Sure Grip Steam Hose Clamps

Made of galvanized steel. Has no raw edges to rust and corrode.

Will hold any pressure that the hose will stand.

For every type and size of steam hose, this clamp makes a perfect circle, with a tongue that slides and adjusts with the tightening of the clamp. Assures a firm grip without cutting.

Each clamp plainly stamped with size and ply.

With Round Head Machine Bolts

Size Hose In.	Hose Ply	I.D. when Open ½-Inch Between Ears Inches	No. Doz. in Box	Wt. Lb. per Gross	Per Doz.
½	3	1	6	10.1	$.84
½	4	1 1/16	6	10.5	.84
½	5	1 3/16	6	11.3	.84
½	6	1¼	6	11.4	.84

With Hexagon Head Bolts

Size Hose In.	Hose Ply	I.D. when Open ¾-Inch between Ears Inches	No. Doz. in Box	Wt. Lb. per Gross	Per Doz.
¾	3	1 5/16	3	16.2	$1.10
¾	4	1⅜	3	17	1.10
¾	5	1 7/16	3	18	1.10
¾	6	1½	3	18	1.10
1	3	1⅝	3	29	1.70
1	4	1 11/16	3	31	1.70
1	5	1¾	3	31	1.70
1	6	1 13/16	3	31	1.70
1¼	4	1 15/16	3	32	1.98
1¼	5	2	3	34	1.98
1¼	6	2 1/16	3	34	1.98
1½	4	2¼	3	38	2.42
1½	5	2 5/16	3	39	2.42
1½	6	2⅜	3	41	2.42
2	4	2⅝	2	50	3.74
2	5	2¾	2	51	3.74
2	6	2⅞	2	52.5	3.74
2¼	4	2 15/16	2	59	4.18
2¼	5	3	2	61	4.18
2¼	6	3 1/16	2	63	4.18

Sure Grip Garden and Water Hose Clamps

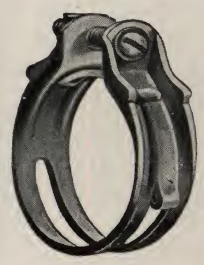
Made of galvanized steel. Has no raw edges to rust or corrode.

True in shape, the tongue rides through a slotted opening, thus assuring a positive grip and a perfect circle at all times.

Each clamp plainly stamped with size and ply.

Size Hose In.	Hose Ply	I.D. when Open ½-Inch Between Ears Inches	No. Doz. in Box	Wt. Lb. per Gross	Per Doz.	Size Hose In.	Hose Ply	I.D. when Open ½-Inch Between Ears Inches	No. Doz. In Box	Wt. Lb. per Gross	Per Doz.
3/16	3	7/16	12	2.5	$.40	1¼	3	1 11/16	3	19	$1.48
¼	3	½	12	3.6	.40	1¼	4	1 13/16	3	20	1.48
⅜	2	9/16	12	4.2	.40	1¼	5	1⅞	3	21.5	1.48
⅜	3	⅝	12	4.2	.40	1½	2	1 15/16	3	21.5	1.76
⅜	4	11/16	12	4.5	.40	1½	3	2	3	22	1.76
½	2	¾	6	5.1	.42	1½	4	2⅛	3	22	1.76
½	W	13/16	6	5.4	.42	1½	5	2 3/16	3	30	1.76
½	3	⅞	6	5.5	.42	1¾	3	2¼	2	40	2.10
½	4	15/16	6	5.5	.42	1¾	4	2⅜	2	40	2.10
½	5	31/32	6	7.4	.42	2	3	2 7/16	2	42	2.20
⅝	2	63/64	6	7.3	.46	2	4	2 9/16	2	43	2.20
⅝	3	1	6	7.3	.46	2	5	2 11/16	2	45	2.20
⅝	4	1⅛	6	7.8	.46	2¼	3	2¾	2	50	2.64
¾	2	1 1/16	6	7.8	.46	2¼	4	2 13/16	2	51	2.64
¾	3	1⅛	6	7.8	.46	2¼	5	2⅞	2	52	2.64
¾	4	1 3/16	6	8.0	.46	2½	3	2 15/16	2	52	2.90
¾	5	1¼	6	8.4	.46	2½	4	3	2	53	2.90
1	2	1 5/16	3	9.3	.78	2½	5	3⅛	2	54	2.90
1	3	1⅜	3	12.5	.78	2¾	4	3¼	1	63	3.96
1	4	1 7/16	3	13.2	.78	3	3	3 7/16	1	63	4.62
1	5	1½	3	13.5	.78	3	4	3½	1	64	4.62
1¼	2	1⅝	3	19.0	1.48	3	5	3⅝	1	67	4.62

Brass Hose Clamps



Made of heavy wrought brass. Rustproof clear through.

Tongue runs in channel holding it close to hose and making a uniform grip. Band portion is pliable, grips tight, and can be opened up, removed, and used again.

Stiff ears cannot pull together at top when tightened, and also form a perfect nut lock.

Heavy shoulder engages vise jaws, permitting clamp to be pulled tight.

Lawn and Air Hose Clamps

Size Hose In.	Ply	Per Doz.	I.D. Open In.	Doz. in Ctn.	Wt. Lb. per Ctn.	Size Hose In.	Ply	Per Doz.	I.D. Open In.	Doz. in Ctn.	Wt. Lb. per Ctn.
3/16	3	$.60	7/16	2	3/8	1/2	2	$.60	7/8	2	7/8
1/4	3	.60	1/2	2	1/2	1/2	3	.60	15/16	2	1
1/4	4	.60	9/16	2	1/2	5/8	3	.60	1 1/32	2	1 1/8
3/8	2	.60	5/8	2	1/2	5/8	4	.60	1 3/32	2	1 1/8
3/8	A	.60	11/16	2	5/8	3/4	3	.60	1 3/16	2	1 1/4
3/8	3	.60	3/4	2	5/8	3/4	4	.60	1 1/4	2	1 3/8

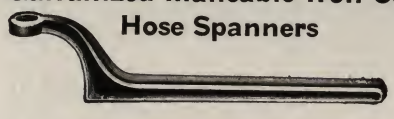
Water Hose Clamps

1	2	$2.00	1 11/32	2	3
1	3	2.00	1 7/16	2	3
1	4	2.00	1 17/32	4	7 1/2
1 1/4	3	2.50	1 21/32	4	7
1 1/4	4	2.50	1 13/16	4	7 5/8
1 1/2	3	3.00	1 15/16	3	7 1/2
1 1/2	4	3.00	2 1/16	3	7 3/4
2	3–4	4.00	2 9/16	2	6 1/4
2 1/4	3–4	6.50	2 7/8	1	4
2 1/2	3–4	7.00	3 1/16	1	4 1/8
3	3–4	10.00	3 3/4	1	6

Steam Hose Clamps

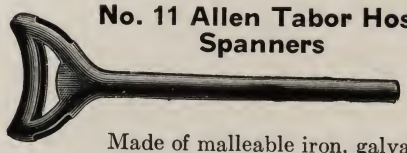
3/4	3	$2.00	1 7/16	6	9
3/4	4	2.00	1 17/32	4	6 5/8
1	3	2.50	1 5/8	4	7
1	4	2.50	1 21/32	4	7
1 1/4	3–4	3.00	1 15/16	3	7 1/2
1 1/2	3–4	3.50	2 7/32	2	8 1/4
1 1/2	5	4.00	2 13/32	2	5 7/8
2	3–4	5.50	2 11/16	2	6 1/4
2	5	6.50	2 7/8	1	4 1/8
2 1/2	3–4	8.50	3 1/4	1	5
2 1/2	5	9.50	3 9/16	1	5 1/2

No. 9 Galvanized Malleable Iron Common Hose Spanners



Size.....inches	1 1/2	2	2 1/2	3	4
No. 9.....per dozen	$4.00	4.50	5.00	7.00	8.00
Length.....inches	9	10	10 3/4	11	12

No. 11 Allen Tabor Hose Spanners



Made of malleable iron, galvanized.

Size.....inches	1 1/2	2 1/2
No. 11.....per dozen	$7.62	9.70
Length.....inches	8	9

Combination Hydrant Wrenches and Spanners

No. 455, Iron.....each $1.50
No. 455, Brass.....each 2.00

Combination Hydrant Cock Wrench and Cleanout Spoon

Made of 5/8-inch round steel rod with yoke on one end for operating hydrant cock and spoon on other end for cleaning debris and dirt from stop cock box. Length 5 feet overall.
Each..... $3.00

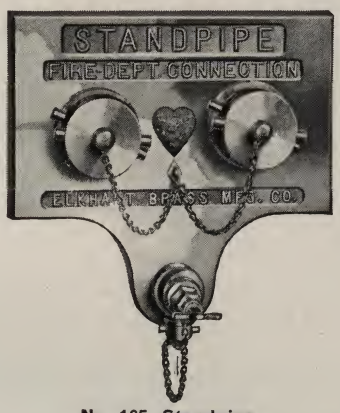
No. 1220 Rubber Hose Washers

Size.....inches	3/4	1	1 1/4	1 1/2	2	2 1/2
No. 1220....per dozen	...	...	...	...	...	...

When Ordering

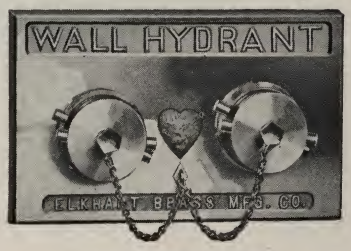
please refer to the sizes and numbers shown in this book. It will help us in filling your order accurately.

Elkhart Flush Type Standpipe and Hydrant Control Units



No. 165, Standpipe

No. 164, Hydrant Control



No. 163, Wall Hydrant

The three connections shown above comprise a complete high pressure fire department unit. The standpipe connection, No. 165, is connected to the fire department pumper which increases pressure in the hose outlet standpipe. The wall hydrant, along with the wall hydrant control functions exactly as does a city hydrant connection, getting its pressure from Underwriter pumps in the basement. The hydrant control is merely an elongated stem of a 4-inch gate valve inside the building which automatically operates the basement fire pumps.

In short, the standpipe connection serves to get water under pressure into the building, while the wall hydrant connection takes water under pressure out of the building.

This unit is, as clearly recognized by engineers, an indispensable feature of modern fire fighting.

A diagram of a typical installation will be sent upon request.

Prices Upon Application

No. 221 Cast Bronze Standpipe Siamese Connections

For Opening Through Wall

Primarily designed for standpipe service in factories, warehouses, etc.

Made to Underwriters' requirements with independent interior self-closing clapper valves in each opening.

Can be furnished with the body finished rough or fully polished or can be cast from white bronze.

When ordering, always supply thread information.

Size.....inches	2½x2½x4	2½x2½x6	*3x3x4	*3x3x6
No. 221.....each	.....	.....	.....	.....

*For New York threads only.

No. 231 Standpipe Connection and Siamese

For use where the inlet pipe comes through the pavement.

Consists of a heavy brass escutcheon to protect and cover the opening in the sidewalk, a polished brass sleeve to cover the iron pipe, and No. 230, polished brass Siamese.

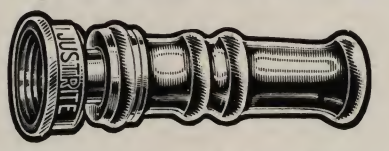
Made for either a 4 or 6-inch standpipe, and with either 2½ or 3-inch inlets on the Siamese.

Complete with plugs and chains.

Made of the best metal and well finished.

Dimen. ...in.	2½x2½x4	2½x2½x6	3x3x4	3x3x6
No. 231 ..ea.	$46.00	55.00	60.00	74.00

Justrite Spray Hose Nozzles



Made of solid brass, heavy and graceful in appearance. The spray is formed by a brass point coming down into the stem. Gives a fine or coarse spray, solid stream and complete shut off.

The rubber washer is permanently affixed in the base of the nozzle, so that the nozzle comes ready for use.

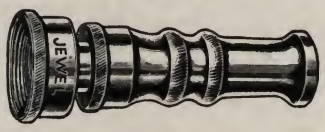
Size, ¾ inch.

Packed 1 dozen in a box; 12 dozen in a case.

Weight, 70¼ pounds per gross.

Price.....per dozen **$9.00**

No. 4703 Allen Jewel Cast Brass Garden Hose Nozzles



Quickly adjusted to produce various sprays, straight streams, and a complete shut-off without leakage.

Tested under water pressure. With 35 pounds pressure at sill cock it sprays 5½ gallons each minute.

Solid cast brass, finished and polished.

Connection, ¾ inch.

Packed 1 dozen in a box.

Weight, 4½ pounds.

No. **4703**, Cast Brass.....per dozen **$7.00**

No. 40 Sherman Diamond Nozzles

Wrought brass; size, ¾ inch.

Packed 12 in a box.

Weight per dozen, 3⅞ pounds.

No. **40**.....per dozen **$6.00**

Hose Nozzles with Screw Tip

Polished cast brass.

Table gives standard discharges. Extra charge on other discharges.

Always supply thread information when ordering.

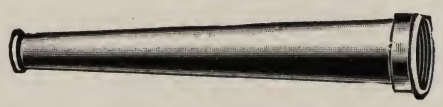
Size In.	Per Dozen	Length Inches	Discharge Inches	Size In.	Per Dozen	Length Inches	Discharge Inches
¾	$7.00	6	¼	1½	$30.00	15	⅝
¾	8.00	7½	¼	2	38.00	12	⅝
¾	10.00	12	¼	2	45.00	15	⅝
1	10.00	8	¼	2½	75.00	15	⅝
1	12.00	12½	¼	2½	96.00	20	1
1¼	20.00	12	⅜	2½	100.00	24	1
1½	24.00	12	½	2½	144.00	30	1

Plain Nozzles

Made of polished cast brass. Table gives standard discharges on nozzles. Discharges different from standard at extra charge. Always supply thread information when ordering.

Size Inches	Length Inches	Discharge Inches	Per Dozen	Size Inches	Length Inches	Discharge Inches	Per Dozen
¾	3	¼	$4.00	1½	10	½	$20.00
¾	6	¼	7.00	1½	12	½	22.00
¾	8	¼	8.00	2	6¾	9/16	26.00
1	4	5/16	5.00	2	12	9/16	34.00
1	8	5/16	9.00	2½	7½	⅝	37.00
1¼	4¾	⅜	12.00	2½	12	1	55.00
1¼	10	⅜	15.00	2½	15	1	65.00
1¼	12	⅜	18.00	2½	18	1⅛	80.00
1½	5¾	7/16	18.00	2½	22	1⅛	92.00

Iron Hose Nozzles

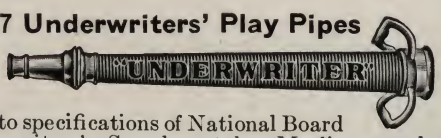


Packed in bulk.

When ordering give thread information.

Size.....inches	1½x12	2x12	2½x12	2½x15
Each.....	$1.62	1.90	2.52	3.20
Weight per Dozen...pounds	18¾	24	46½	48

No. 107 Underwriters' Play Pipes



Made to specifications of National Board of Underwriters'. Seamless tube, Marlin wound, painted red; swivel handle. Screw tip nozzle with 1⅛-inch discharge is standard. Specify thread.

No. **107**, Size, 2½x30 Inches.....each **$17.40**

No. 7016 Allen Ring Lawn Sprinklers

Made of heavy sheet brass and is so strongly crimped that it cannot be forced apart under heavy pressure.

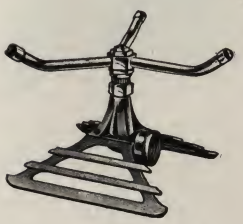
Diameter 8½ inches; with inserted ¾-inch solid hose connection with clean, sharp, cut threads.

Packed 1 dozen in a carton.

Weight, 13½ pounds.

No. **7016**, All Brass.....per dozen **$15.00**

No. 7019 Zenith Revolving Lawn Sprinklers



The bearing reduces friction and leakage to a minimum.

Highly polished brass head and arms; base is finished with all red glossy enamel, baked on.

Diameter of arm spreader, 9¾ inches; height, 5½ inches.

Base, 6½x6⅝ inches.

Packed 1 in box; 12 in a carton.

Shipping weight per dozen, 33 pounds.

Diameter of Circle It Waters....feet	27	32	35
No. **7019**.....per dozen	**$18.00**	**18.00**	**18.00**
Pressure at Sill Cock.....pounds	20	30	40
Spray.....g.p.m.	**4**	**4¾**	**5½**

No. 7009 Allen Winfield Revolving Lawn Sprinklers

Height, 9⅞ inches. Iron base is 6½x6⅝ inches. Brass arms have a diameter spread of 10¼ inches. Head is brass. Has ¾ inch hose connection with cut threads. Finish is bright.

Diam. Circle.ft.	30	32	34
Pressure at Sill Cock.....lb.	20	30	40
Sprays in Min. .....gal.	5	6	7

Packed 1 in a box; 12 in a carton.

Shipping weight per carton, 26 pounds.

No. **7009**.....per dozen **$15.80**

No. 75 Sherman Portable Spray Heads

For connecting with hose in series to create a movable and flexible lawn sprinkling system.

Ingenious spray head construction produces a mist-like spray, evenly covering wide area.

Attractive appearance. Made entirely of brass, nickeled. Securely mounted on heavy pressed steel lacquered base.

Made only for ¾ hose thread.

Packed in cartons of four spray heads with two caps.

No. **75**.....each ....

HOSE RACKS AND REELS

A number of other types and sizes are available. Please tell us your needs. Bulletins and prices will be sent you.

PHONE OR WRITE

Jack Bronze Sprinkler System Spray Heads

Not Adjustable

This spray head is adapted to sections of the country where climatic conditions do not require a covered head.

Delivers a fine mist spray and gives exceptional even coverage.

Thread connection, ½ and ¾ inch. Length overall, 1⅜ inches. Weight per dozen, 4½ pounds.

No.	Type	Spacing Feet	GPM.	No.	Type	Spacing Feet	GPM.
445	Full	10	1.7	**451**	Half	18	2.9
445A	Full	14	1.9	**452**	Half	20	3.5
446	Full	16	3.3	**453**	Quar.	10	1.4
447	Full	18	4.0	**453A**	Quar.	14	1.4
448	Full	20	4.5	**454**	Quar.	16	2.0
449	Half	10	1.5	**455**	Quar.	18	2.2
449A	Half	14	1.6	**456**	Quar.	20	3.2
450	Half	16	2.1	...	.....	..	...

All Nos.....each **$.80**

Ace Bronze Sprinkler System Spray Heads

Gives a fine mist spray and is recommended for the larger system where sufficient water pressure and volume are available. Pop-up type.

Thread connection, ¾ inch. Length overall, 5⅛ inches.

Weight each, 1½ pounds.

No.	Type	Spacing Feet	GPM.	No.	Type	Spacing Feet	GPM.
400	Full	16	3.5	**408**	Quar.	16	2.0
401	Full	18	4.5	**409**	Quar.	18	2.2
402	Full	20	5.0	**410**	Quar.	20	3.2
403	Full	25	7.7	**411**	Quar.	25	4.0
404	Half	16	2.1	**412**	Line	16	1.55
405	Half	18	2.9	**413**	Line	18	1.9
406	Half	20	3.5	**414**	Line	20	2.4
407	Half	25	5.9	**415**	Line	25	2.7

All Nos.....each **$4.50**

Hartford Swinging Hose Racks

APPROVED BY ASSOCIATED FACTORY MUTUAL INS. CO.

Made with the arched bedplate which relieves the folded ends of the weight of the hose.

Packed in individual wooden boxes. Stock finished in red enamel, baked on. Nos. 25 and 26 will carry heavy rubber-lined cotton hose in 50-foot lengths.

Furnished with clamps or wall brackets. In ordering state which is desired and if pipe clamps give the size of the pipe. Capacity of racks for linen hose is figured on hose with only one set of couplings. Where hose is coupled in two or more lengths, next larger size rack is required.

Pipe Clamps

Prices include pipe clamps up to and including 4-inch size. For larger size pipe clamps there is an extra charge.

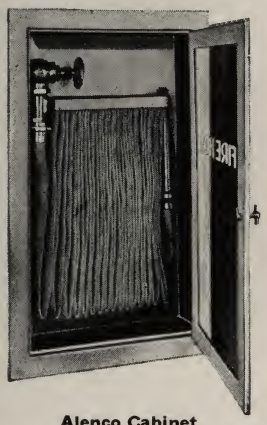
For Unlined Linen Hose

No. Style A Pipe Clamps	No. Style B Wall Brack.	Each	Cap. Ft.	Hose Size In.	No. Style A Pipe Clamps	No. Style B Wall Brack.	Each	Cap. Ft.	Hose Size In.
17H	**017H**	**$5.00**	50	1¼	**21 A**	**021 A**	**$6.00**	100	1¼
18H	**018H**	**5.00**	50	1½	**21 H**	**021 H**	**6.00**	100	1½
19H	**019H**	**5.00**	50	2	**21½H**	**021½H**	**6.00**	100	2
20H	**020H**	**5.00**	50	2½	**22 H**	**022 H**	**6.00**	100	2½
17A	**017A**	**5.50**	75	1¼	**23 H**	**023 H**	**7.00**	150	1½
18A	**018A**	**5.50**	75	1½	**23½H**	**023½H**	**7.00**	150	2
19AH	**019AH**	**5.50**	75	2	**24 H**	**024 H**	**7.00**	150	2½
20A	**020A**	**5.50**	75	2½	.....	.....	....	...	...

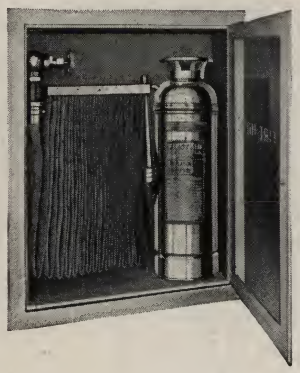
For Cotton Rubber-Lined Mill Hose

25H	**025H**	**$7.50**	50	1½	**26H**	**026H**	**$8.00**	50	2½
25½H	**025½H**	**7.50**	50	2	....	.....	....	..	...

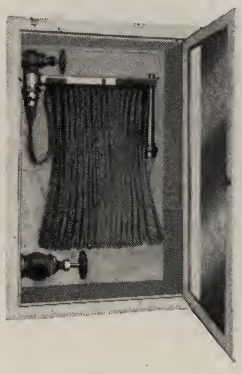
Allen Fire Hose Cabinets
Without Equipment



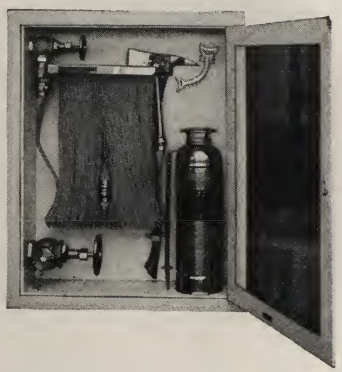
Alenco Cabinet No. 262. Shown with No. 6 Hose Equipment



Alenco Cabinet No. 215. Shown with No. 16 Hose Equipment



Alenco Cabinet No. 214. Shown with No. 9 Hose Equipment



Alenco Cabinet No. 192. Shown with No. 1 Hose Equipment

The fire hose cabinets shown may be furnished with or without hose equipment. The prices are for the cabinets only, without any equipment such as hose, racks, extinguishers, etc.

Alenco Cabinets—The doors and casings around the doors of the cabinets are pressed from furniture steel, are welded, and have hollow steel doors and trim. The door fits into a rabbet and excludes dust and dirt. The standard projecting trim of the cabinet is 1¼ inches.

Nella Cabinets—Made of sheet steel and can be used in place of the Alenco for any of the fire hose units described.

Glass For Doors—All cabinets can be furnished, prepared for panels of plate glass, or DSA (Double Strength Quality A) glass, or with Duo Panel doors.

Lettering—Additional charge of 50 cents net each cabinet for the words FIRE HOSE in gilt (not gold leaf) letters 1½ inches high on the glass panel. Letters 2½ inches in red and gilt, (not gold leaf), 70 cents net each cabinet.

Gold leaf letters can be furnished at $4.00 net each cabinet.

Alenco Finish—The standard finish is white enamel inside, and white priming coat outside. Prices on request for special finishes.

Nella Finish—The standard finish for Nella sheet steel cabinets is gray priming coat inside and outside. Prices on request for special finishes.

Hinges and Handles—All standard cabinets are equipped with hinges on the right hand side. Hinges on the left hand side can be furnished only when specified. Loose pin hinges and lever handle catch on Alenco cabinets are of brass, nickel plated, but can be chromium plated at a slight additional charge. Bullet catch and pull handle can be furnished if desired.

Special Cabinets—Federal, Government, Thermostatic, Institutional, Tamper-Proof, Break Glass, Valve, and Single or Double Door, and other Special Fire Hose Unit Cabinets, Steel Boxes, and Steel Tubs will be quoted on request.

Cabinets For No. 6 Fire Hose Unit

Hose Capacity Feet	Angle Valve Size Inches	Inside Width Inches	Inside Height Inches	Inside Depth Inches	Alenco 262 Cabinet Only: D. S. A. Glass Panel	Alenco 262 Cabinet Only: Plate Glass Panel	Alenco 262 Cabinet Only: Duo Panel Door	Alenco 262 Cabinet Only: Approx. Ship. Wt. Pounds	Nella 11 Cabinet Only: D. S. A. Glass Panel	Nella 11 Cabinet Only: Plate Glass Panel
50	1½ or 1¼	19¾	28¾	5½	$24.00	$29.00	$29.00	35	$21.00	$25.00
75	1½ or 1¼	20¾	30¾	5½	25.00	30.00	30.00	37	22.00	26.00
100	1½ or 1¼	22¾	32¾	5½	27.50	34.00	32.50	43	24.00	28.00
125	1½ or 1¼	24¾	38¾	5½	31.00	40.00	38.00	73	27.00	31.00
150	1½ or 1¼	24¾	38¾	5½	31.00	40.00	38.00	73	27.00	31.00
50	2	19¾	28¾	6½	24.00	29.00	29.00	37	21.00	25.00
75	2	22¾	32¾	6½	27.50	34.00	32.50	43	24.00	28.00
100	2	24¾	34¾	6½	27.50	34.00	32.50	70	25.00	29.00
125	2	24¾	38¾	6½	31.00	40.00	38.00	73	27.00	31.00
150	2	24¾	38¾	6½	31.00	40.00	38.00	73	27.00	31.00
50	2½	19¾	28¾	7½	24.00	29.00	29.00	37	21.00	25.00
75	2½	22¾	32¾	7½	27.50	34.00	32.50	43	24.00	28.00
100	2½	24¾	34¾	7½	27.50	34.00	32.50	70	25.00	29.00
125	2½	24¾	38¾	7½	31.00	40.00	38.00	73	27.00	31.00
150	2½	24¾	42¾	7½	33.00	42.00	40.00	80	29.00	33.00

Cabinets For No. 16 Fire Hose Unit

					Alenco 215 Cabinet Only				Nella 215N Cabinet Only	
*	†	32¾	34¾	8½	$31.00	$38.00	$36.00	55	$27.40	$31.45

Cabinets For No. 9 Fire Hose Unit

					Alenco 214 Cabinet Only				Nella 214N Cabinet Only	
50	‡	20¾	30¾	8½	$28.00	$33.00	$32.00	38	$24.65	$26.25
75	‡	22¾	32¾	8½	29.00	35.00	34.00	44	25.60	28.85
100	‡	24¾	38¾	8½	33.00	40.00	38.00	75	29.25	33.20

Cabinets For No. 1 Fire Hose Unit

					Alenco 192 Cabinet Only				Nella 192N Cabinet Only	
*	§	30¾	38¾	8½	$35.00	$44.00	$40.00	64	$31.10	$36.65

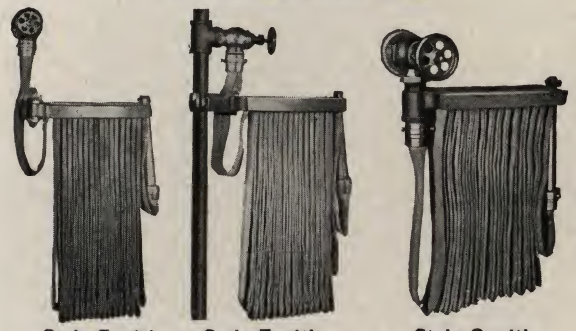
Cabinets For Fire Extinguishers Only

					Alenco 285 Cabinet Only				Nella 285N Cabinet Only	
...	...	12	27	8	$18.00	$20.00	$21.00	29	$15.90	$16.60

*For 50, 75 or 100-foot hose.
†For 1¼, 1½, 2 or 2½-inch valve.
‡Upper valve 1¼ or 1½ inches, lower valve 2½ inches.
§Upper valve 1½ inches, lower valve 2½ inches.

Bowes Hose Racks

For Unlined Linen Hose



Style E with Wall Bracket — Style F with Pipe Clamp — Style G with Valve Nipple

The Bowes Rack consists of a tubular arm on which are slidably mounted eyeleted pins, supporting the folded hose. This gives a positive support; the pressure is equal on both sides, prevents pinching of the hose and holds it in place until the hose is withdrawn at the open end, the pins remaining on the extension arm. Rack has a cover; the hose cannot jam.

In ordering Style F racks, specify size of stand pipe.

No. Style E	No. Style F	No. Style G	Each Regular Finish	Each Nickel-Plated	Each Chromium-Plated	Capacity Feet	Hose Size Inches
			Steel				
30	40	50	$5.00	$7.00	$9.00	50	1¼
31	41	51	5.00	7.00	9.00	50	1½
32	42	52	5.00	7.00	9.00	50	2
33	43	53	5.00	7.00	9.00	50	2½
30A	40A	50A	5.50	7.50	9.50	75	1¼
31A	41A	51A	5.50	7.50	9.50	75	1½
32A	42A	52A	5.50	7.50	9.50	75	2
33A	43A	53A	5.50	7.50	9.50	75	2½
34X	44X	54X	6.00	8.00	10.00	100	1¼
34	44	54	6.00	8.00	10.00	100	1½
35	45	55	6.00	8.00	10.00	100	2
36	46	56	6.00	8.00	10.00	100	2½
34A	44A	54A	6.00	8.00	10.00	150	1½
35A	45A	55A	6.00	8.00	10.00	150	2
36A	46A	56A	6.00	8.00	10.00	150	2½
			Brass				
30	40	50	$10.00	$11.00	$13.00	50	1¼
31	41	51	10.00	11.00	13.00	50	1½
32	42	52	10.00	11.00	13.00	50	2
33	43	53	10.00	11.00	13.00	50	2½
30A	40A	50A	11.00	12.00	14.00	75	1¼
31A	41A	51A	11.00	12.00	14.00	75	1½
32A	42A	52A	11.00	12.00	14.00	75	2
33A	43A	53A	11.00	12.00	14.00	75	2½
34X	44X	54X	12.00	13.00	15.00	100	1¼
34	44	54	12.00	13.00	15.00	100	1½
35	45	55	12.00	13.00	15.00	100	2
36	46	56	12.00	13.00	15.00	100	2½
34A	44A	54A	12.00	13.00	15.00	150	1½
35A	45A	55A	12.00	13.00	15.00	150	2
36A	46A	56A	12.00	13.00	15.00	150	2½

Where the rack is swung from the valve, Style G, a pipe thread nipple is furnished without charge. For nipples with special threads the following net extra charge per rack applies.

Steel Nipples

Size Inches	Each
1½	$1.50
2	1.70
2½	2.00

Solid Brass Nipples

Size Inches	Each
1½	$1.70
2	2.00
2½	2.20

Where pipe clamps are specified, Style F, they are furnished up to and including 4-inch, without charge. For larger sizes there is a net extra charge per rack as follows:

Steel Clamps

Size ... inches	4½	5	6	7	8
Each	$.80	1.00	1.20	1.30	1.80

Elkhart Fire Extinguishers

Carbon Tetrachloride Hand Type

Recommended for electric, gasoline, oil, paint or grease fires.

For use in automobiles, electric cars, boats, busses, trucks, airplanes, garages, railway coaches, homes, public buildings, etc.

Operated with an air pump which discharges liquid 25 to 30 feet.

Pure carbon tetrachloride base with other chemicals added prevents freezing at 50°F. below zero. Interior parts made of non-corrosive metal.

To operate turn handle and pump liquid on base of fire, vapor blanket smothers fire.

Approved by Underwriters' Laboratories, Associated Factory Mutuals and U. S. Dept. of Commerce, Steamboat Inspection Service.

Classification, both sizes, B-2, C-2.

Capacity ... quarts		1	1½
Polished Brass ... each		$16.00	$20.00
Nickel Plated ... each		17.50	21.50
Chromium Plated ... each		18.00	22.00
Weight ... lbs.		8	10
Recharge ... each		1.45	2.25

Tamper Proof Cabinets

Substantially built of metal with glass front, heavily enameled.

Red color.

Capacity ... quarts	1	1½
Each	$3.00	4.00
Weight ... lbs.	4	4

Elkhart 2½ Gallon Fire Extinguishers

Anti-Freeze Pressure Type

To operate, invert extinguisher and strike spindle in the cover sharply on floor or ground. Liquid is discharged immediately in a powerful, steady and continuous stream. The extinguisher is discharged by carbon dioxide, a highly effective agent in itself.

Freezes at 40°F.

Approved by Underwriters' Laboratories and Associated Factory Mutuals.

Polished Copper ... each	$33.00
Nickel Plated ... each	35.00
Chromium Plated ... each	36.00
Weight ... lbs.	30
Recharge ... each	9.80
CO_2 Cartridge Only ... each	6.50
Crystalline ... each	3.30

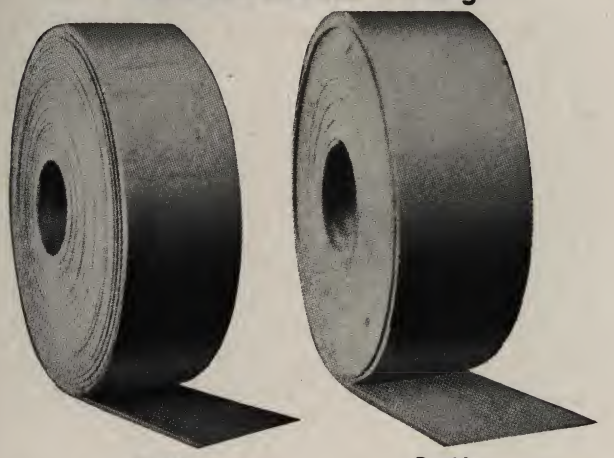
Elkhart Fire Extinguishers

2½ Gal. Soda Acid Type

The Elkhart Fire Extinguisher is safe, sure, and simple to operate. It consists of a three-gallon copper cylinder, highly polished and lacquered, with brass screw top, chemically treated rubber hose with non-corrosive nozzle, and a chemical bottle held by a metal cage. A loose tapered metal stopper fits loosely in the bottle and when extinguisher is turned bottom end up, stopper falls away from mouth of bottle and allows the chemical to flow into the larger body of chemical in the cylinder, and immediately a stream of carbonic acid gas is thrown in dense vapor form to a distance of fifty feet, instantly extinguishing the fire. Tested to 350 pounds pressure.

Each	$17.00
Refill ... per dozen	7.20

Standard Leather Belting



Single			Double			Double		
Width Inches	Single per Ft.	Double per Ft.	Width Inches	Single per Ft.	Double per Ft.	Width Inches	Single per Ft.	Double per Ft.
½	$.12	$.24	6	$1.44	$2.88	34	$8.16	$16.32
¾	.18	.36	7	1.68	3.36	36	8.64	17.28
1	.24	.48	8	1.92	3.84	38	9.12	18.24
1¼	.30	.60	9	2.16	4.32	40	9.60	19.20
1½	.36	.72	10	2.40	4.80	42	10.08	20.16
1¾	.42	.84	12	2.88	5.76	44	10.56	21.12
2	.48	.96	14	3.36	6.72	46	11.04	22.08
2¼	.54	1.08	16	3.84	7.68	48	11.52	23.04
2½	.60	1.20	18	4.32	8.64	50	12.00	24.00
2¾	.66	1.32	20	4.80	9.60	52	12.48	24.96
3	.72	1.44	22	5.28	10.56	54	12.96	25.92
3½	.84	1.68	24	5.76	11.52	56	13.44	26.88
4	.96	1.92	26	6.24	12.48	60	14.40	28.80
4½	1.08	2.16	28	6.72	13.44	64	15.36	30.72
5	1.20	2.40	30	7.20	14.40	68	16.32	32.64
5½	1.32	2.64	32	7.68	15.36	72	17.28	34.56

Rhoads Tannate Watershed Leather Belting

For high speeds over small pulleys, and for drives subject to overloads or variable loads.

Made from Rhoads special Tannate tanned leather of close selection and cemented with waterproof cement and thoroughly waterproofed.

Well stretched tough and pliable, and has an unusual pulling surface.

Tannate grip is 20 to 25 per cent stronger than best oak belting.

Sold from special Tannate lists.

Rhoads Tannate Special Rounded Leather Belting

This belting lasts 2 to 5 times as long as oak tanned belts.

Has such close hug and grip that it keeps the machine running at high speed without the belt being exceedingly tight.

Supplied on 100-foot spools in handy box.

Size Inches	Per Foot	Size Inches	Per Foot
⅛	$.06	5/16	$.22
3/16	.09	⅜	.35
¼ Reg.	.10	7/16	.42
¼ Hvy.	.12	½	.46
9/32	.16	9/16	.61

Standard Rubber Belt List

Per Foot

Size, In.	2-Ply	3-Ply	4-Ply	5-Ply	6-Ply	7-Ply	8-Ply
1	$.18	$.20	$.24	.....	.....	.....	.....
1¼	.23	.26	.30	.....	.....	.....	.....
1½	.27	.31	.36	$.45	.....	.....	.....
1¾	.32	.36	.42	.53	.....	.....	....
2	.34	.39	.46	.58	$.69	$.81	$.92
2½	.42	.48	.56	.70	.84	.98	1.12
3	.48	.55	.65	.81	.98	1.14	1.31
3½	.57	.65	.76	.95	1.14	1.33	1.52
4	.61	.70	.82	1.03	1.23	1.44	1.65
4½	.68	.78	.92	1.15	1.38	1.61	1.84
5	.76	.87	1.02	1.28	1.53	1.79	2.05
6	.91	1.04	1.22	1.53	1.83	2.14	2.44
7	1.07	1.22	1.43	1.79	2.15	2.50	2.86
8	1.15	1.31	1.54	1.93	2.31	2.70	3.08
9	1.29	1.47	1.73	2.16	2.60	3.03	3.46
10	1.43	1.63	1.92	2.40	2.88	3.36	3.84
11	1.57	1.79	2.11	2.64	3.17	3.69	4.22
12	1.72	1.96	2.30	2.88	3.45	4.03	4.60
13	1.86	2.13	2.50	3.13	3.75	4.38	5.00
14	2.00	2.29	2.69	3.36	4.04	4.71	5.38
15	2.14	2.45	2.88	3.60	4.32	5.04	5.76
16	2.29	2.62	3.08	3.86	4.62	5.40	6.16
18	2.57	2.94	3.46	4.32	5.20	6.06	6.92
20	2.85	3.26	3.84	4.80	5.76	6.72	7.68
22	3.14	3.59	4.22	5.28	6.34	7.38	8.44
24	3.42	3.91	4.60	5.76	6.90	8.06	9.20
26	3.71	4.26	5.01	6.26	7.50	8.76	10.00
28	4.00	4.57	5.38	6.72	8.08	9.42	10.76
30	4.29	4.90	5.76	7.20	8.64	10.08	11.52
32	4.59	5.25	6.18	7.72	9.24	10.80	12.32
34	4.87	5.56	6.54	8.18	9.82	11.46	13.08
36	5.14	5.87	6.91	8.64	10.40	12.12	13.84
38	5.43	6.21	7.31	9.14	10.96	12.78	14.60
40	5.72	6.54	7.69	9.61	11.52	13.44	15.36
42	6.00	6.86	8.07	10.09	12.10	14.10	16.12
44	6.28	7.18	8.45	10.56	12.68	14.76	16.88

Prices on heavier plies upon application.

Republic Challenger Transmission Belting

Recommended for lumber mills, brick and refining plants, mining, textile, paper and chemical industries, and hammer mill drives. Ideal for heavy drives. Constructed of Silver duck, impregnated with high grade friction rubber. Skimmed between each ply. Without seams or splices. Friction surface, with edges cemented. Belt can be operated from either side.

Made in standard widths and number of plies up to 48 inches in either roll lengths or continuous endless constructions.

Invader Transmission Belting

Renders economical, troublefree service on all classes of drives in nearly every major industry.

Constructed with 32-ounce soft woven duck, impregnated with highest grade friction and heavily cushioned under the outer plies with a heavy skim of rubber for additional flexibility. Friction surface in folded edge construction only. Supplied standard widths and any number of plies to meet specific conditions; roll lots or endless. Color, red. Sold from Standard List.

Republic Aero Transmission Belting

Made for long and efficient service on average industrial drives. Also for thresher and tractor service under exposure to the elements, and general farm use for medium and light work.

Black friction surface belt of balanced construction with standard soft woven 32 ounce duck, impregnated with high grade synthetic rubber friction compound.

Supplied in factory built endless constructions, in sizes shown in the tabulated list of Endless Farm and Tractor Belts, or in roll lots as specified.

Sold from regular belting list.

Republic Endless Industrial Cord Belts

For power transmission on installations where operating conditions are unusually severe and unfavorable to the successful performance of even the best grades of standard rubber belting. Its flexibility lends itself to operation over small pulleys at high speeds.

Made in three weights: light, medium and heavy.

Prices upon application.

Republic Endless Transmission Belts

An endless belt must be used where the design of drive precludes the application of a cut length belt joined by means of mechanical fasteners.

Endless belting does away with the objectionable checking and pounding as the belt passes over the pulleys; possible tearing out of the fasteners with damage to the belt is eliminated.

The length to be ordered is made contingent upon the load carried by the belt and the actual takeup available. Adequate takeup facilities must be provided in the drive to maintain operating tension and to allow for a slight degree of service stretch.

When ordering factory made endless belts the minimum tape line length should be given. To avoid mistakes, it is also necessary to provide information regarding the permissible range of the takeup.

Republic Endless Conveyor Belts

In addition to increasing the ability of conveyor belting to pull heavier loads due to the elimination of mechanical fasteners when made endless by means of a vulcanized splice, this method of joining the ends is frequently employed to prevent destruction of fasteners when handling corrosive material or protect the troughing idlers against seepage of dusty or abrasive material through a mechanical joint.

The length to be ordered is made contingent upon the load carried by the belt and the actual takeup available. Adequate takeup facilities must be provided in the drive to maintain operating tension and to allow for a slight degree of service stretch.

When ordering factory made endless belts the minimum tape line length should be given. To avoid mistakes, it is also necessary to provide information regarding the permissible range of the takeup.

Republic Super Excelo Conveyor Belting

For most severe operations where loads are heavy, materials large and abrasion excessively high.

High quality rubber cover is applied with adhesion breaker strip around top and edges for added protection.

Made in straight or step ply construction.

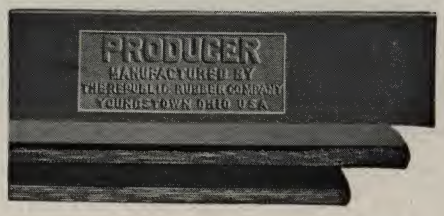
Prices upon application.

Republic Record Maker Conveyor Belting

A heavy duty belt for severe service. Recommended for mines, quarries to handle material up to 8 inches, slag, crushing plants, aggregates, sugar refineries, etc.

Weight of fabric, thickness of cover and number of plies made to order for each application. Step ply construction on request. Beaker strip under top cover and edges when specified.

Republic Producer Conveyor Belting



Constructed for use in industries for average conditions where abrasion is not excessive. Used in mines and quarries.

Made to fit each job with correct cover thickness, fabric weight and number of plies for most economical service.

Furnished with breaker strip and step ply construction when specified.

Prices upon application.

Republic Chariot Rubber Conveyor Belting

An all purpose belt for general industrial use. Designed for efficient handling of screened coal, sand and gravel, clay, shale, sugar, salt, cold cement, tailings, wood chips, fine ore and rock, packages, etc.

Built to specifications most satisfactory for the installation. Breaker strip furnished when specified. Step ply construction when ordered.

Prices upon application.

Republic Reprene Oil Resisting Conveyor Belting

For use where oily conditions prevail.

Neoprene reinforced belt has superior oil resistance, ply adhesion and wear resisting cover.

Prices and construction, based upon engineering requirements and service applications, furnished on request.

Republic Excelo Elevator Belting

A heavy duty belt recommended where service conditions due to size and abrasiveness of material are severe. Used in ore mines, smelters, quarries, stone and gravel plants, chemical plants, sugar refineries, etc.

Carcass consists of heavy woven silver duck of high tensile strength, with a skim coat between each ply. Breaker fabric is applied on both sides and around edges to minimize cover injury and separation. Tough, abrasion-resistant, rubber cover provides protection from grinding and cutting action of gritty particles between pulleys and belt.

As breaker cannot be used on covers less than 3/32-inch thick, the minimum gage on this belt of either cover is 3/32 inch when breaker is applied under the covers. The pulley side cover is frequently thickened to 5/32 inch or more for protection against wear. In such cases, orders should specify that thicker side is used against the pulleys. Prices upon request.

Republic Challenge Elevator Belting

When space limitation or design in material handling equipment by means of rubber belting necessitates the use of a vertical lift or increases the inclination of a conveyor to such a degree that the material cannot be kept from rolling back, a belt running over a head pulley to which buckets are attached must be used.

Rubber belting is made for bucket elevators to meet different classes of service. For each application consideration must be given to the construction and grade of belt best suited for the purpose. For heavy duty service where material consists of large lumps and the lift is high, the belt must be rugged enough to sustain the load and also protect it against abrasive wear. For wet service the body of the belt must be protected with a rubber cover.

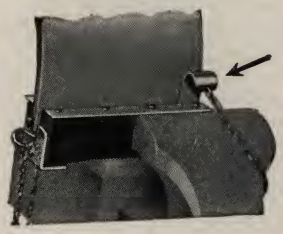
The general requirements for an elevator belt are:

1. Sufficient flexibility to wrap easily around pulleys.
2. Width enough to fasten elevator buckets securely and to avoid twisting or turning over on the ascent.
3. Sufficient number of plies to transmit the working load without excessive stretch.
4. Thickness sufficient to back up the buckets without deflection and to resist the tendency of the bolts to pull through the belt.
5. A rubber cover on bucket and pulley side for protection against excessive wear when handling coarse and abrasive material, or where moisture is present.

Prices upon request.

Clipper Belt Lacers

No. 0 Vise Lacers



For use in any ordinary vise. For belts 4 or 6 inches wide. Special pressure plate as indicated by arrow makes it possible to embed the hooks flush with the surface of the belt, also to clinch the points.

Size.....inches	4	6
Each.....	$3.00	3.50
Weight.pounds	4	6

No. 9 Portable Lacers

Easily carried to the belt. Laces one end of any belt up to 6 inches wide and not over 3/8 inch thick in one operation, forming a perfect line of loops. For wider belts repeat. Perfect loops permit the use of larger connecting pins, therefore longer service.

Each hook makes a perfect contact with connecting pin. This distributes pull equally on every hook in joint.

No. 9, Complete with Stand; Wt., 56 Lb.....each **$45.00**
Special Adapter for No. 1 Hooks, Laces Thin Belts from 1/8 to 3/16-inch Thick.....each **2.75**

No. 8 Speed Lacers

Will lace one end of any belt up to 8 inches wide in one operation. For wider belts repeat operation. A three-quarter turn of double end crank will embed hooks flush with the surface of any belt and clinch points. Clinch keeps hooks from working up and becoming worn or fatigued by pounding on the pulleys.

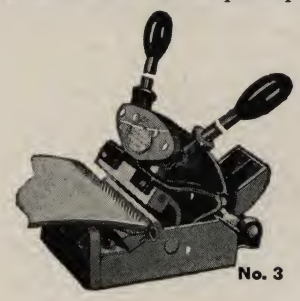
Suitable for all belts up to 3/8 inch thick.

No. 8, Complete with Stand; Wt., 174 Lb... ..each **$115.00**

No. 6 Speed Lacers

Built on the same principle as the No. 8 but is smaller. Will lace one end of any belt up to 6 inches wide in one operation. Weight with stand, 120 pounds.

No. 6, Complete with Stand.....each **$75.00**


No. 3

No. 3

For lacing one end of any belt not exceeding 6 inches wide and 3/8 inch thick in one operation. For wider belts repeat operation.

Weight, 25 pounds.

No. 3.....each **$25.00**

Nos. 1 and 101

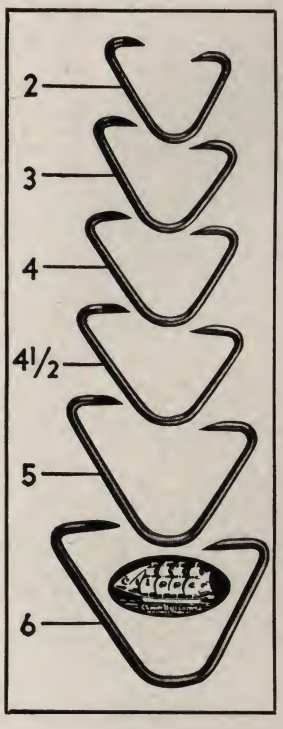
Use only No. 1 belt hooks. For belts not more than 2 inches wide and not exceeding 3/16 inch thick.

No. 1

No. 101

	Portable Type	Vise Type
No.....	1	101
Each.....	$10.00	2.50
Weight .pounds	4	1

Clipper Belt Lacing



Clipper Belt Lacing makes a smooth joint, flexible as the belt itself. The hooks are made of a highly specialized steel wire. It combines great tensile strength and wearing qualities. Capable of standing strain of 400 pounds per inch.

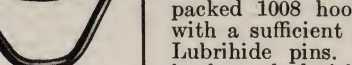
Reinforcing strip prevents card from collapsing and permits cutting of card with a knife without waste.

Double-Staggered Grip Showing Even Distribution of Hook Point Strain on the Belt

No. 1 box contains 20 cards of 50 hooks each and 12 Lubrihide pins. Nos. 2 to 6 are packed 1008 hooks per box with a sufficient quantity of Lubrihide pins. Rustproof hooks packed with waterproof bamboo pins. Packed 25 boxes in standard carton.

No.	Description	Regular per Box	Rust-proof per Box	Ship. Wt. Lb. per Std. Ctn
1	For Use in Nos. 1 and 101 Lacers	$.85	$1.85	17
2	For Thin Belts over Small Sized Pulley	.95	1.95	31
3	For Thin Belts over Medium Sized Pulley	1.00	2.00	33
4	For Belts Not over ¼ Inch Thick	1.00	2.00	35
4½	For Heavy Duty Belts, ¼ Inch Thick	1.15	2.40	39
5	For Belts Not over 5/16 Inch Thick	1.25	2.50	46
6	For Belts Not over ⅜ Inch Thick	1.50	2.75	56

Clipper Connecting Pins



Wear 2 to 4 times longer; built-in lubrication.

Bamboo pins are waterproof and long wearing; for use under wet conditions.

Packed in standard packages of 24 pins, 12 inches long. Standard packages range in weight from ¾ to 4½ ounces.

Size No.	Diam. In.	For	Lubrihide per Pkg.	Rawhide per Pkg.	Bamboo per Pkg.
13	3/32	Nos. 1, 2, and 3 Hooks	$1.00	$.85	$.95
12	7/64	Nos. 4 and 4½ Hooks	1.00	.85	.95
11	⅛	No. 5 Hooks	1.00	.85	.95
10	9/64	No. 5 Hooks	1.15	.95	1.10
9	5/32	No. 6 Hooks	1.25	1.05	1.20
8	11/64	No. 6 Hooks	1.35	1.15	1.30
7	3/16	For Special Purposes	....	1.45	....
5	7/32	For Special Purposes	....	2.00	....
Assorted Sizes, Nos. 8 to 13			1.10	.90	1.05

Clipper Belt Cutters

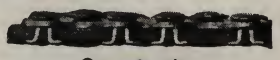
Open End Model

For cutting belting from roll or squaring belt ends, preparatory to lacing them. Strong and sturdily built.

Size.....inches	6	10
Each	$15.00	$20.00
Extra Blades..each	1.50	2.75
Weight.....pounds	11	16

Crescent Belt Fasteners

Outside of Crescent Joint



Cross Section

Pulley Side of Crescent Joint

Crescent Plates are curved to fit the diameter of pulley for which they are intended.

Crescent Rivets find their way through belt without cutting or severing lengthwise fibre. The clinch sinks below the surface of the belt. No wear nor noise. Crescent Belt Fasteners will outlast the belt.

The strain is evenly distributed across the entire width of belt. Crescent joining is as smooth as endless on pulley side. Belt ends are butted tightly together. No gap to catch on shifter or guide.

Service Chart

Short Grip Plates

For Light Work on Pulleys 3-Inch Diameter or Larger

No.	Per Gross	For Belt Widths Inches	Crescent Rivets Required	Weight Pounds Per Gross
25	$2.88	¾–1	2	1¾
45	5.76	1½	4	3¼
65	8.64	2	6	4½
85	11.52	2½	8	5½
805	11.52	3	8	6½
...	.....	....	.	...

Medium Grip Plates

For General Work on Pulleys 6-Inch Diameter or Larger

No.	Per Gross	For Belt Widths Inches	Crescent Rivets Required	Weight Pounds Per Gross
67	$8.64	1½	6	6
607	8.64	2	6	7½
87	11.52	2½	8	9½
107	14.40	3	10	11¼
127	17.28	3½	12	15¼
147	20.16	4	14	16½

Special Grip Plates

For General Work on Pulleys 9-Inch Diameter or Larger

63	$11.52	2	6	10½
83	14.40	2½	8	12½
103	17.28	3	10	16½
123	20.16	3½	12	20½

Long Grip Plates

For Heavy Work on Pulleys 12-Inch Diameter or Larger

109	$17.28	2½	10	21½
149	23.04	3	14	24½
1409	25.92	3½	14	30½
189	28.80	4	18	34½

Large Shank Rivets for Attaching Above Plates

Use a size 5/16 inch longer than thickness of belt.

No.	Per Gross	Lgth. In.	Wt., Oz. per Gross	No.	Per Gross	Lgth. In.	Wt., per Gross Lbs.	Wt., per Gross Oz.
L5	$.70	5/16	10	L10	$.90	10/16	1	..
L6	.70	6/16	11	L11	1.00	11/16	1	1
L7	.80	7/16	12	L12	1.00	12/16	1	2
L8	.80	8/16	14	L13	1.10	13/16	1	3
L9	.90	9/16	15	L14	1.10	14/16	1	4

Jumbo Plates

For Ex. Hvy. Work on Pulleys 24-Inch Diameter or Larger

No.	Per Gross	For Belt Widths Inches	Crescent Rivets Required	Weight Pounds Per Gross
1011	$23.04	2	10	22½
1611	28.80	3	16	37½
2211	34.56	4	22	51½

For wider belts use 2 or more Crescent Plates.

For conveyor or elevator work where belt runs at a comparatively slow speed, Jumbo Plates can be used where smaller pulley is 18″ diameter or larger.

Jumbo Rivets for Attaching Jumbo Plates

Use a size 5/16 inch longer than thickness of belt.

No.	Per Gross	Length Inches	Weight per Gross Lb.	Weight per Gross Oz.	No.	Per Gross	Length Inches	Weight per Gross Lb.	Weight per Gross Oz.
J10	$1.25	10/16	1	9	J14	$1.55	14/16	1	14
J11	1.40	11/16	1	11	J15	1.70	15/16	1	15
J12	1.40	12/16	1	12	J16	1.70	16/16	2	..
J13	1.55	13/16	1	13	J18	1.85	18/16	2	4

No. 79 Extractors

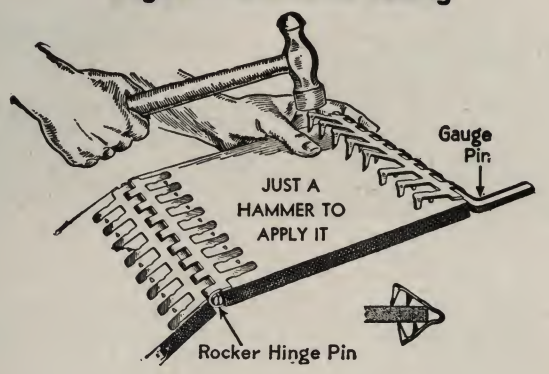
A specially designed tool for removing Crescent Rivets quickly and easily.

Length, 8 inches.

Weight, 1 pound.

No. 79.....each $1.50

Alligator Steel Belt Lacing



For use on leather, rubber, balata, stitched canvas or solid woven belting, giving a smooth, flexible joint; also for general service, high speed and heavy duty.

Efficient separable hinge lacing of extreme strength. Protects ends of fabric belts. Operates successfully with an idler or on serpentine drives. No tool required but a hammer.

Packed in boxes complete with gage and hinge pins.

Lacing No.	Per Box	Contents: No. Sets	Contents: For Size Belts, In.	Thickness of Belt Inches
00	$1.40	6	6	Up to 1/16
1	1.60	6	6	1/16 to 3/32
5	1.80	6	6	3/32 to 1/8
15	1.90	4	12	1/8 to 5/32
20	2.00	4	12	5/32 to 3/16
25D	2.50	4	12	3/16 to 7/32
25F	2.50	6	8	3/16 to 7/32
25G	5.00	8	12	3/16 to 7/32
27K	2.65	4	12	1/4 to 9/32
27L	5.30	8	12	1/4 to 9/32
35M	2.30	4	8	9/32 to 5/16
35N	3.40	4	12	9/32 to 5/16
45U	4.50	4	12	5/16 to 3/8
55W	5.20	4	12	3/8 to 7/16
65X	6.00	4	12	7/16 to 1/2
75	8.80	4	12	1/2 to 5/8

Corrugated pins supplied regularly with Nos. 00, 1 and 5 Alligator tape fasteners.

Sectional steel rocker hinge pins supplied regularly with Nos. 15 to 75, inclusive, for transmission service.

Rawhide hinge pins supplied with Nos. 00 to 45, inclusive, only upon request.

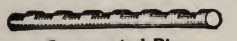
Economy Packages

Each package contains one 12-inch set of lacing complete with gage and hinge pins.

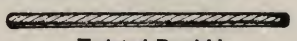
Packed in cartons, 10 packages of a single size to the carton.

Size No.	15E	20E	25E	27E	35E
Per Carton	$4.75	5.00	6.25	6.65	8.50

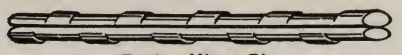
Extra Hinge Pins—Cut to Suit Requirements



Corrugated Pin
For Nos. 00 to 75 Inclusive



Twisted Rawhide
For Nos. 00 to 45 Inclusive



Rocker Hinge Pin
For Nos. 15 to 75 Inclusive

Description	Per Doz.	For Lacing No.	Lgth. Pins In.
Corrugated Wire or Rawhide Pins	$.40	00	6
Corrugated Wire or Rawhide Pins	.40	1	6
Corrugated Wire or Rawhide Pins	.40	5	6
Rocker, Corrugated or Rawhide Pins	.90	15	12
Rocker, Corrugated or Rawhide Pins	.90	20	12
Rocker, Corrugated or Rawhide Pins	.90	25	12
Rocker, Corrugated or Rawhide Pins	1.00	27	12
Rocker, Corrugated or Rawhide Pins	1.00	35	12
Rocker, Corrugated or Rawhide Pins	1.20	45	12
Rocker or Corrugated Pins Only	1.40	55–65	12
Rocker or Corrugated Pins Only	1.70	75	12

Bristol Steel Belt Lacing

Staggered Point Style for All Kinds of Belts

Size No.	Thickness Belt, Inches	Kind of Belt	Per Box
*1100	1/16 to 1/8	Split Leather, Light Rubber and Cotton	$2.00
*110	1/8 to 5/32	Split Leather, Light Rubber and Cotton	1.50
*110½	5/32 to 1/4	Single Leather, 2-Ply Rubber and Cotton	1.50
†111	3/16 to 1/4	Single Leather, 3-Ply Rubber and Cotton	1.50
†112	1/4 to 5/16	Ex. Heavy and Wide Single Leather, 4-Ply Rubber and Cotton	2.00
†113	5/16 to 3/8	Double Leather, 5-Ply Rubber and Cotton	2.50
†114	3/8 to 7/16	Heavy Double Leather, 6-Ply Rubber and Cotton	3.00
†115	7/16 to 9/16	Extra Heavy Double Leather, 7-Ply Rubber and Cotton	3.50
†117	1/2 to 5/8	Conveyor and 8-Ply Rbr. and Cot.	4.95
†119	5/8 to 13/16	10-Ply and Extra Heavy Conveyor	6.05

*Box contains enough to lace 50 inches in widths of belts.
†Box contains enough to lace 100 inches in widths of belts.

Cut Lacing

In 100-foot bunches.

Width.....in.	1/4	5/16	3/8	7/16	1/2	5/8	3/4
Per 100 Ft.	$2.50	3.00	3.75	4.50	5.50	6.50	7.50

Style B LX Belt Hooks

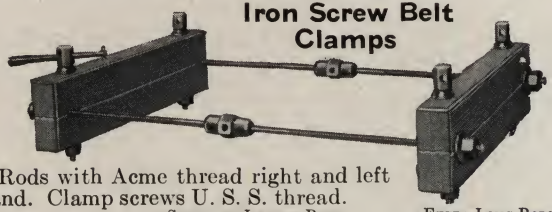
For Round Belts

No. 15

Especially adapted for sewing machine belts. Facked 500 in a box.

No. 17, for Belts Smaller than 1/4 Inch.....per 1000 $2.00
No. 16, for Belts 1/4 to 5/16 Inch.....per 1000 2.25
No. 15, for Belts 5/16 to 3/8 Inch.....per 1000 2.50
No. 14, for Belts Over 3/8 Inch.....per 1000 3.00

Iron Screw Belt Clamps



Rods with Acme thread right and left hand. Clamp screws U. S. S. thread.

No.	Belt	No. Acme Threads per Inch	Standard Length Rods Inches	Each	Wt. Lb.	Extra Long Rods Length Rods Inches	Each	Wt. Lb.
270	14	6	36	$15.00	48	60	$20.00	54
271	18	6	44	17.50	65	68	22.50	77
272	24	5	54	22.50	90	90	30.00	102
273	36	5	66	45.00	190	102	52.50	202
274	48	4½	96	*	300	...	.....	...
275	60	3½	120	*	475	...	.....	...
276	72	3	120	*	850	...	.....	...

*Prices on application.

Rhoads Klingfast Leather Belt Cement

A strong glue cement.
1-Pound Cans.....each $.75

Rhoads Waterproof Cement

Unaffected by water. Possesses great strength. Should always be used in wet and damp places.
1-Quart Jars.....each $1.50

Dixon's Solid Belt Dressing

For Leather, Rubber and Composition Belts

The giant red-labelled bar encased in cardboard cylinder which is simply peeled off as the dressing is used.

Quick and easy to apply; is applied without stopping the machinery. Prevents belt-slip and preserves belt-life.

Length, 8 inches. Diameter, 2 inches.

Per Bar..... $.50
Per Carton of 25 Bars..... 10.00

Rhoads Stick Leather Belt Dressing

A superior bar belt dressing. Supplied in sticks, handy for quick application.

Lubricates the leather and makes the belt stick to its work.

Weight of stick, 1-pound.

Per Pound..... $.50

Rhoads Tannate Belt Preserver

A liquid preserver specifically compounded to scientifically prolong the life of leather belting. For use on all leather belts.

Weights are approximate.

Size Container.....	1 Qt.	12 Qts.	½ Drum	Drum
Per Quart.....	$1.25	1.15	*.44	*.43
Weight..... pounds	2	....	200	400

*Per pound.

Gates Duck Tensile Section V Belting

Open End Pattern

Designed for V-belt applications where it is impossible to use endless belts. Built of multiple layers of special woven duck impregnated with rubber.

No.	Per Foot	Cross Sectional Dimensions Inches	Section	Maximum Length Feet	*Approx. Distance Between Belt Ends Inches
A-VO	$.28	.555x.344x40°	A	250	..
B-VO	.37	.688x.438x40°	B	250	¾
C-VO	.68	.938x.625x40°	C	250	1
D-VO	1.27	1.312x.750x40°	D	250	1

*The approximate distance between belt ends given in the above tabulation is the space occupied by the splice (coupling).

Gates Vulco Standard Cord V Belts

For Fractional Horsepower Drives

Each belt is individually molded to the precise size of the pulley groove and permits center distances as short as the pulleys allow.

13/32x7/32-Inch

Belt No.	Each	Outside Circumference Inches
1130	$.98	13.0
1150	.98	15.0
1170	.98	17.0
1190	.98	19.0
1200	.98	20.0
1210	.98	21.0
1220	.98	22.0
1230	.98	23.0
1237	.98	23.7
1240	.98	24.0
1245	.98	24.5
1250	.98	25.0
1255	1.00	25.5
1260	1.00	26.0
1270	1.02	27.0
1280	1.04	28.0
1285	1.07	28.5
1290	1.07	29.0
1300	1.09	30.0
1310	1.12	31.0
1313	1.15	31.3
1320	1.15	32.0
1330	1.18	33.0
1340	1.21	34.0
1345	1.23	34.5
1350	1.23	35.0
1355	1.27	35.5
1360	1.27	36.0
1365	1.30	36.5
1370	1.30	37.0
1380	1.32	38.0
1390	1.35	39.0
1400	1.38	40.0
1410	1.42	41.0
1420	1.46	42.0
1430	1.50	43.0
1440	1.53	44.0
1450	1.55	45.0
1460	1.57	46.0
1470	1.59	47.0
1490	1.66	49.0
1580	1.92	58.0
1610	2.01	61.0
1675	2.21	67.5
1700	2.29	70.0

33/64x9/32 Inch

Belt No.	Each	Outside Circumference Inches
2170	$1.02	17.0
2180	1.02	18.0
2190	1.02	19.0
2200	1.02	20.0
2210	1.02	21.0
2220	1.02	22.0
2230	1.02	23.0
2240	1.02	24.0
2250	1.02	25.0
2260	1.04	26.0
2270	1.06	27.0
2280	1.08	28.0
2290	1.11	29.0
2300	1.14	30.0
2310	1.17	31.0

33/64x9/32-Inch, Cont.

Belt No.	Each	Outside Circumference Inches
2320	$1.20	32.0
2330	1.23	33.0
2335	1.26	33.5
2340	1.26	34.0
2350	1.29	35.0
2360	1.32	36.0
2370	1.35	37.0
2380	1.38	38.0
2390	1.41	39.0
2400	1.44	40.0
2405	1.48	40.5
2410	1.48	41.0
2420	1.52	42.0
2430	1.56	43.0
2440	1.60	44.0
2450	1.62	45.0
2460	1.64	46.0
2470	1.67	47.0
2480	1.70	48.0
2490	1.73	49.0
2500	1.76	50.0
2510	1.79	51.0
2520	1.82	52.0
2530	1.85	53.0
2540	1.88	54.0
2550	1.91	55.0
2560	1.94	56.0
2570	1.97	57.0
2580	2.00	58.0
2590	2.03	59.0
2600	2.06	60.0
2610	2.09	61.0
2620	2.12	62.0
2630	2.15	63.0
2640	2.18	64.0
2650	2.21	65.0
2655	2.24	65.5
2660	2.24	66.0
2670	2.27	67.0
2680	2.30	68.0
2690	2.33	69.0
2700	2.36	70.0
2710	2.39	71.0
2730	2.45	73.0
2740	2.48	74.0
2760	2.54	76.0
2770	2.58	77.0
2780	2.62	78.0
2800	2.70	80.0
2820	2.73	82.0
2840	2.76	84.0
2860	2.81	86.0
2870	2.83	87.0
2880	2.86	88.0
2900	2.90	90.0
2920	2.94	92.0
2940	3.00	94.0
2960	3.06	96.0
2980	3.12	98.0
21000	3.20	100.0

11/16x11/32-Inch

Belt No.	Each	Outside Circumference Inches
3230	$1.20	23.0
3250	1.20	25.0
3260	1.25	26.0
3265	1.29	26.5
3270	1.29	27.0
3290	1.37	29.0
3310	1.45	31.0
3320	1.48	32.0
3330	1.52	33.0
3340	1.56	34.0
3350	1.60	35.0
3355	1.65	35.5
3360	1.65	36.0
3370	1.70	37.0
3380	1.74	38.0
3390	1.78	39.0
3400	1.84	40.0
3410	1.90	41.0
3420	1.96	42.0
3430	2.02	43.0
3440	2.08	44.0
3450	2.12	45.0
3460	2.16	46.0
3470	2.20	47.0
3480	2.25	48.0
3490	2.30	49.0
3500	2.35	50.0
3510	2.39	51.0
3520	2.44	52.0
3530	2.49	53.0
3540	2.53	54.0
3550	2.57	55.0
3560	2.62	56.0
3575	2.72	57.5
3580	2.72	58.0
3590	2.77	59.0
3600	2.83	60.0
3610	2.89	61.0
3620	2.94	62.0
3630	2.98	63.0
3640	3.02	64.0
3650	3.06	65.0
3660	3.10	66.0
3670	3.15	67.0
3680	3.20	68.0
3690	3.25	69.0
3700	3.30	70.0
3710	3.35	71.0
3720	3.40	72.0
3730	3.44	73.0
3740	3.48	74.0
3760	3.57	76.0
3780	3.68	78.0
3800	3.78	80.0
3820	3.88	82.0
3840	3.98	84.0
3860	4.05	86.0
3880	4.12	88.0
3920	4.28	92.0
3930	4.32	93.0
3960	4.44	96.0
3980	4.54	98.0
31000	4.64	100.0

Gates Vulco Rope V-Belts

Important Features

Concave Side Walls.—All Gates Vulco Ropes are molded with concave sidewalls and this construction insures a uniformly distributed pressure between the sidewalls of the belt and the sides of the groove as the belt bends around the sheave. More h.p. is transmitted at a lower belt tension and sidewall wear is distributed over all the sidewall surface.

Latexed Cords.—The latexing process increases the elasticity and strength of the cords and prevents them from chafing as the belt bends around the pulleys. Latex cords are responsible for the long life of Gates Vulco Ropes in the most severe service.

Bias Cut Cover.—A strong, flexible, wear-resisting cover of bias cut fabric protects the core of every Gates Vulco Rope from dirt and water and ply separation.

Necessary Data for Ordering

Type of equipment to be driven (ice machine, grinder, compressor, etc.).

Type of power used (electric motor, Diesel engine, gasoline engine, etc.).

Outside diameter of driver pulley now being used.

Width of face of driver pulley now being used.

Outside diameter of driven pulley now being used.

Width of face of driven pulley now being used.

Maximum outside diameter of driver sheave that can be used.

Minimum outside diameter of driven sheave that can be used.

Speed or r.p.m. of motor or driving shaft (actual load speed).

Diameter of shaft and size of keyway on motor or driving shaft.

Speed or r.p.m. of driven shaft.

Diameter of shaft and size of keyway on driven shaft.

H.P. rating of motor or engine to be used.

Actual maximum h.p. required by driven unit (if available).

Shaft centers: Maximum shaft center distance that can be used; minimum shaft center distance that can be used; preferred distance between shaft centers.

Send sketch of drive.

How many of above drives required.

Gates Vulco Rope V-Flat Drives

Especially designed as a replacement drive where flat belts have been used, such as ice machines, compressors, grinders, etc.

Ordinarily a multiple V-belt drive consists of two grooved sheaves and a set of belts.

The V-Flat Drive saves the expense of replacing or grooving the large pulley.

The regular flat type of pulley or the pulley in use on the machine at the present time is used on the V-Flat Drive The small flat pulley is replaced with a grooved sheave.

Further information will be furnished on request.

Gates Vulco Rope V-Belts

Vulco Rope Drives have been applied to almost all types of machinery.

Gates Vulco Rope V-Belts are interchangeable with V-belts made by other manufacturers.

Standard Sizes

Belt No.	Each	Length Pitch Inches	Weight Pounds
A—17/32x 11/32 Inch			
26A	$1.30	27.0	.1
31A	1.40	32.0	.2
35A	1.50	36.0	.2
38A	1.60	39.0	.2
42A	1.70	43.0	.2
46A	1.80	47.0	.2
51A	1.90	52.0	.2
60A	2.10	61.0	.3
68A	2.30	69.0	.3
75A	2.50	76.0	.3
80A	2.70	81.0	.4
85A	2.90	86.0	.4
90A	3.10	91.0	.4
96A	3.30	97.0	.4
105A	3.60	106.0	.5
112A	4.00	113.0	.5
120A	4.30	121.0	.6
128A	4.60	129.0	.6
B—11/16x7/16 Inch			
35B	$2.00	36.5	.3
38B	2.20	39.5	.3
42B	2.40	43.5	.4
46B	2.60	47.5	.4
51B	2.80	52.5	.4
55B	2.90	56.5	.5
60B	3.00	61.5	.5
68B	3.30	69.5	.6
75B	3.60	76.5	.6
81B	3.90	82.5	.7
85B	4.10	86.5	.7
90B	4.30	91.5	.7
97B	4.70	98.5	.8
105B	5.00	106.5	.9
112B	5.40	113.5	.9
120B	5.70	121.5	1.0
128B	6.10	129.5	1.1
144B	6.90	145.5	1.3
158B	7.50	159.5	1.4
173B	8.20	174.5	1.5
180B	8.60	181.5	1.6
195B	9.30	196.5	1.7
210B	10.00	211.5	1.8
240B	11.30	240.0	2.1
270B	12.80	270.0	2.3
300B	14.20	300.0	2.6
C—15/16x9/16 Inch			
51C	$4.60	53.0	.8
60C	5.40	62.0	1.0

Belt No.	Each	Length Pitch Inches	Weight Pounds
C—15/16x9/16 Inch—Cont.			
68C	$6.10	70.0	1.1
75C	6.70	77.0	1.2
81C	7.30	83.0	1.3
85C	7.50	87.0	1.4
90C	8.10	92.0	1.5
96C	8.60	98.0	1.6
105C	9.40	107.0	1.7
112C	10.00	114.0	1.8
120C	10.70	122.0	1.9
128C	11.40	130.0	2.2
144C	12.80	146.0	2.4
158C	14.00	160.0	2.7
162C	14.30	164.0	2.8
173C	15.30	175.0	2.9
180C	16.00	182.0	3.1
195C	17.30	197.0	3.3
210C	18.70	212.0	3.5
240C	21.00	240.0	4.0
270C	23.70	270.0	4.5
300C	26.30	300.0	5.1
330C	28.90	330.0	5.6
360C	31.50	360.0	6.1
D—15/16x3/4 Inch			
120D	$19.80	122.5	3.9
128D	21.10	130.5	4.1
144D	23.70	146.5	4.7
158D	26.00	160.5	5.1
162D	26.80	164.5	5.2
173D	28.40	175.5	5.6
180D	29.50	182.5	5.8
195D	32.00	197.5	6.2
210D	34.50	212.5	6.7
240D	38.80	240.0	7.7
270D	43.70	270.0	8.6
300D	48.50	300.0	9.6
330D	53.40	330.0	10.6
360D	58.20	360.0	11.5
E—1 19/32x29/32 Inch			
180E	$42.50	183.5	8.6
195E	46.00	198.5	9.1
210E	49.60	213.5	9.8
240E	55.70	240.0	11.3
270E	62.60	270.0	12.7
300E	69.60	300.0	14.2
330E	76.60	330.0	15.5
360E	83.50	360.0	16.9

Discontinued as Standard—To Be Used for Replacement

Belt No.	Each	Length Pitch Inches	Weight Pounds
A—17/32x11/32 Inch			
110A	$3.90	111.0	.5
136A	4.90	137.0	.6
144A	5.20	145.0	.7
158A	5.80	159.0	.8
173A	6.20	174.0	.8
180A	6.60	181.0	.9
B—11/16x7/16 Inch			
136B	$6.50	137.5	1.2
225B	10.65	225.3	1.9
255B	12.05	255.3	2.2
285B	13.50	285.3	2.5
315B	15.20	315.3	2.7
C—15/16x9/16 Inch			
136C	$12.10	138.0	2.3
225C	19.85	225.0	3.7
255C	22.35	255.0	4.3
285C	25.00	285.0	4.8
315C	27.60	315.0	5.3
345C	30.20	345.0	5.8
390C	34.15	390.0	6.6
420C	36.80	420.0	7.1

Belt No.	Each	Length Pitch Inches	Weight Pounds
D—15/16x3/4 Inch			
225D	$36.65	225.0	7.2
255D	41.25	255.0	8.0
285D	46.10	285.0	9.1
315D	50.95	315.0	10.1
345D	55.80	345.0	11.0
390D	63.05	390.0	12.5
420D	68.20	420.0	13.4
480D	78.20	480.0	15.4
540D	88.20	540.0	17.3
600D	98.20	600.0	18.3
660D	106.70	660.0	20.3
E—1 19/32x29/32 Inch			
144E	$34.10	147.5	6.9
225E	52.65	225.0	10.5
390E	90.45	390.0	18.4
420E	98.50	420.0	19.8
480E	113.50	480.0	22.7
540E	128.50	540.0	25.5
600E	143.50	600.0	28.3
660E	158.50	660.0	32.7

Gates V-Belt Drive Sheaves For A Section Belts

Multiduty Sheaves—For Drives of 6 Belts or Less

Multiduty sheaves are grooved to operate perfectly with either A or B section belts. A belts will ride low in the grooves. Made of cast semi-steel.

Complete Range of Bores

Type 1 Sheaves. From ½ to 1⅝ inches in increments of 1/16 inch.

Type 2 Sheaves. From ½ to 2 7/16 inches in increments of 1/16 inch.

Standard Keyseats

Diameter Shaft Inches	Width In.	Depth Inches Std.	Depth Inches Shal.	Diameter Shaft Inches	Width In.	Depth Inches Std.	Depth Inches Shal.
½ – 9/16	1/8	1/16	..	2 5/16 – 2¾	5/8	5/16	3/16
5/8 – 7/8	3/16	3/32	..	2 13/16 – 3¼	3/4	3/8	3/16
15/16 – 1¼	1/4	1/8	..	3 5/16 – 3¾	7/8	7/16	1/4
1 5/16 – 1¾	3/8	3/16	..	3 13/16 – 4¼	1	1/2	1/4
1 13/16 – 2¼	1/2	1/4	1/8	.....	...	..	..

1 Groove — Face 1 In.

Pitch Diam. In.	Type	Bush No.	Max. Bore	Width of Hub In.	Wt. Lb.
3.0	1	A	1⅝	1¼	2.0
3.2	1	A	1⅝	1¼	2.2
3.4	1	A	1⅝	1¼	2.4
3.6	1	A	1⅝	1¼	2.6

2 Grooves — Face 1¾ In.

Type	Bush No.	Max. Bore	Width of Hub In.	Wt. Lb.
1	B	1⅝	2	3.2
1	B	1⅝	2	3.6
1	B	1⅝	2	4.0
1	B	1⅝	2	4.3

1 Groove — Face 1 In.

Pitch Diam. In.	Type	Bush No.	Max. Bore	Width of Hub In.	Wt. Lb.
3.8	1	A	1⅝	1¼	2.7
4.0	1	A	1⅝	1¼	2.9
4.2	1	A	1⅝	1¼	3.1
4.4	1	A	1⅝	1¼	3.3
4.6	1	A	1⅝	1¼	3.5
4.8	1	A	1⅝	1¼	3.7
5.0	1	A	1⅝	1¼	3.9
5.2	1	A	1⅝	1¼	4.1
5.4	1	A	1⅝	1¼	4.3
5.6	1	A	1⅝	1¼	4.4
5.8	1	A	1⅝	1¼	4.5
6.0	1	A	1⅝	1¼	4.7
6.2	1	A	1⅝	1¼	4.8
6.4	1	A	1⅝	1¼	5.0
7.0	2	D	2 7/16	2	9.5
8.2	2	D	2 7/16	2	10.0
9.0	2	D	2 7/16	2	10.5
10.6	2	D	2 7/16	2	12.3
12.0	2	D	2 7/16	2	14.5
15.0	2	D	2 7/16	2	17.3
18.0	2	D	2 7/16	2	22.0

2 Grooves — Face 1¾ In.

Type	Bush No.	Max. Bore	Width of Hub In.	Wt. Lb.
1	B	1⅝	2	4.7
1	B	1⅝	2	5.0
1	B	1⅝	2	5.4
1	B	1⅝	2	5.8
1	B	1⅝	2	6.1
1	B	1⅝	2	6.4
1	B	1⅝	2	6.8
1	B	1⅝	2	7.0
1	B	1⅝	2	7.2
1	B	1⅝	2	7.3
1	B	1⅝	2	7.4
1	B	1⅝	2	7.5
1	B	1⅝	2	7.6
1	B	1⅝	2	7.8
2	D	2 7/16	2	11.0
2	D	2 7/16	2	12.0
2	D	2 7/16	2	13.0
2	D	2 7/16	2	15.5
2	D	2 7/16	2	17.5
2	D	2 7/16	2	22.3
2	D	2 7/16	2	27.0

3 Grooves — Face 2½ In.

Pitch Diam. In.	Type	Bush No.	Max. Bore	Width of Hub In.	Wt. Lb.
3.0	1	B	1⅝	2	4.2
3.2	1	B	1⅝	2	4.5
3.4	1	B	1⅝	2	5.0
3.6	1	B	1⅝	2	5.4
3.8	1	B	1⅝	2	5.9
4.0	1	B	1⅝	2	6.4
4.2	1	B	1⅝	2	6.9
4.4	1	B	1⅝	2	7.4
4.6	1	B	1⅝	2	7.9
4.8	1	B	1⅝	2	8.5
5.0	1	B	1⅝	2	8.9
5.2	1	B	1⅝	2	9.2
5.4	1	B	1⅝	2	9.5
5.6	1	B	1⅝	2	9.7
5.8	1	B	1⅝	2	9.9
6.0	1	B	1⅝	2	10.1
6.2	1	B	1⅝	2	10.3
6.4	1	B	1⅝	2	10.5
7.0	2	D	2 7/16	2	13.5
8.2	2	D	2 7/16	2	14.5
9.0	2	D	2 7/16	2	16.0
10.6	2	D	2 7/16	2	18.8
12.0	2	D	2 7/16	2	21.5
15.0	2	D	2 7/16	2	26.8
18.0	2	D	2 7/16	2	33.3

4 Grooves — Face 3¼ In.

Type	Bush No.	Max. Bore	Width of Hub In.	Wt. Lb.
1	C	1⅝	3¼	5.3
1	C	1⅝	3¼	6.0
1	C	1⅝	3¼	6.8
1	C	1⅝	3¼	7.5
1	C	1⅝	3¼	8.3
1	C	1⅝	3¼	9.1
1	C	1⅝	3¼	9.9
1	C	1⅝	3¼	10.3
1	C	1⅝	3¼	10.6
1	C	1⅝	3¼	10.9
1	C	1⅝	3¼	11.2
1	C	1⅝	3¼	11.4
1	C	1⅝	3¼	11.5
1	C	1⅝	3¼	11.9
1	C	1⅝	3¼	12.3
1	C	1⅝	3¼	12.7
1	C	1⅝	3¼	13.3
1	C	1⅝	3¼	13.8
2	E	2 7/16	3¼	18.8
2	E	2 7/16	3¼	19.5
2	E	2 7/16	3¼	22.3
2	E	2 7/16	3¼	24.3
2	E	2 7/16	3¼	29.0
2	E	2 7/16	3¼	33.0
2	E	2 7/16	3¼	41.5

5 Grooves — Face 4 In.

Type	Bush No.	Max. Bore	Width of Hub In.	Wt. Lb.
1	C	1⅝	3¼	6.2
1	C	1⅝	3¼	6.9
1	C	1⅝	3¼	7.8
1	C	1⅝	3¼	8.7
1	C	1⅝	3¼	9.7
1	C	1⅝	3¼	10.6
1	C	1⅝	3¼	11.4
1	C	1⅝	3¼	12.1
1	C	1⅝	3¼	12.5
1	C	1⅝	3¼	12.9
1	C	1⅝	3¼	13.1
1	C	1⅝	3¼	13.3
1	C	1⅝	3¼	13.5
1	C	1⅝	3¼	14.0
1	C	1⅝	3¼	14.5
1	C	1⅝	3¼	15.0
1	C	1⅝	3¼	16.0
1	C	1⅝	3¼	16.5
2	E	2 7/16	3¼	21.3
2	E	2 7/16	3¼	23.0
2	E	2 7/16	3¼	24.3
2	E	2 7/16	3¼	27.0
2	E	2 7/16	3¼	35.5
2	E	2 7/16	3¼	38.3
2	E	2 7/16	3¼	50.5

6 Grooves — Face 4¾ In.

Type	Bush No.	Max. Bore	Width of Hub In.	Wt. Lb.
1	C	1⅝	3¼	6.9
1	C	1⅝	3¼	7.8
1	C	1⅝	3¼	8.7
1	C	1⅝	3¼	9.7
1	C	1⅝	3¼	10.7
1	C	1⅝	3¼	11.7
1	C	1⅝	3¼	12.6
1	C	1⅝	3¼	13.2
1	C	1⅝	3¼	13.7
1	C	1⅝	3¼	14.1
1	C	1⅝	3¼	14.4
1	C	1⅝	3¼	14.7
1	C	1⅝	3¼	15.0
1	C	1⅝	3¼	15.5
1	C	1⅝	3¼	16.0
1	C	1⅝	3¼	16.5
1	C	1⅝	3¼	17.0
1	C	1⅝	3¼	18.0
2	E	2 7/16	3¼	24.3
2	E	2 7/16	3¼	25.0
2	E	2 7/16	3¼	27.8
2	E	2 7/16	3¼	32.0
2	E	2 7/16	3¼	39.5
2	E	2 7/16	3¼	42.0
2	E	2 7/16	3¼	50.8

Standard (Non-Stock) Sheaves

For heavy service, or for any drive using more than six belts. Made of cast iron. Available in any diameter or bore, and for any number of belts, on order from factory.

In ordering a drive on which one sheave is Multiduty and one sheave Standard, specify Multiduty groove spacing on the Standard sheave.

Diam. In.	1 Groove Face ¾ In. Type	Width Hub In.	Wt. Lb.	2 Grooves Face 1⅜ In. Type	Width Hub In.	Wt. Lb.	3 Grooves Face, 2 In. Type	Width Hub In.	Wt. Lb.	4 Grooves Face, 2⅝ In. Type	Width Hub In.	Wt. Lb.	5 Grooves Face 3¼ In. Type	Width Hub In.	Wt. Lb.	6 Grooves Face 3⅞ In. Type	Width Hub In.	Wt. Lb.	7 Grooves Face 4½ In. Type	Width Hub In.	Wt. Lb.
3.6	1	1¼	4	1	1¼	5	1	1½	6	1	2	7	1	2½	8	1	3	9	1	3½	10
3.7	1	1¼	4	1	1¼	5	1	1½	7	1	2	8	1	2½	9	1	3	10	1	3½	11
3.8	1	1¼	4	1	1¼	5	1	1½	7	1	2	8	1	2½	9	1	3	10	1	3½	11
3.9	1	1¼	4	1	1¼	6	1	1½	7	1	2	9	1	2½	9	1	3	11	1	3½	12
4.0	1	1¼	4	1	1¼	6	1	1½	8	1	2	9	1	2½	10	1	3	11	1	3½	12
4.1	1	1¼	4	1	1¼	6	1	1½	8	1	2	9	1	2½	10	1	3	12	1	3½	13
4.2	1	1¼	4	1	1¼	6	1	1½	8	1	2	10	1	2½	11	1	3	12	1	3½	13
4.3	1	1¼	5	1	1¼	7	1	1½	9	1	2	10	1	2½	11	1	3	13	1	3½	14
4.4	1	1¼	5	1	1¼	7	1	1½	9	1	2	11	1	2½	12	1	3	13	1	3½	14
5.0	1	1¼	5	1	1¼	8	1	1½	10	1	2	12	1	2½	13	1	3	15	1	3½	17
6.0	1	1¼	6	1	1¼	9	1	1½	11	1	2	13	1	2½	15	1	3	17	1	3½	20
7.0	1	1¼	7	1	2	10	1	2	12	1	2	14	1	2½	16	1	3	19	1	3½	21
8.6	1	1¼	9	1	2	12	1	2	14	1	2	16	1	2½	19	1	3	22	1	3½	24
11.0	2	2	12	1	2	15	1	2	18	1	2	22	1	2½	25	1	3	28	1	3½	32
13.6	2	2	15	1	2	19	1	2	24	1	2	28	1	2½	32	1	3	36	1	3½	41
16.0	2	2	18	1	2	26	1	2	32	1	2½	38	1	3	43	1	3	49	1	3½	55
20.0	2	2	26	2	2	36	2	2	44	2	2½	51	2	3	59	2	3	66	2	3½	74
25.0	2	2	38	2	2	53	2	2	64	2	2½	76	2	3	88	2	3	102	2	3½	116

Gates V-Belt Drive Sheaves For B Section Belts

Multiduty Sheaves For Drives of 6 Belts or Less

Made of cast semi-steel.

Complete Range of Bores

Type 1 Sheaves. From ½ to 1⅝ inches in increments of 1/16 inch.

Type 2 Sheaves. From ½ to 2⅞ inches in increments of 1/16 inch.

Groove spacing, ¾ inch.

Pitch Diam. In.	1 Groove Face 1 Inch: Type	Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.	4 Grooves Face 3¼ Inches: Type	Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.
4.6	1	A	1⅝	1¼	3.1	1	C	1⅝	3¼	9.9
4.8	1	A	1⅝	1¼	3.3	1	C	1⅝	3¼	10.3
5.0	1	A	1⅝	1¼	3.5	1	C	1⅝	3¼	10.6
5.2	1	A	1⅝	1¼	3.7	1	C	1⅝	3¼	10.9
5.4	1	A	1⅝	1¼	3.9	1	C	1⅝	3¼	11.2
5.6	1	A	1⅝	1¼	4.1	1	C	1⅝	3¼	11.4
5.8	1	A	1⅝	1¼	4.3	1	C	1⅝	3¼	11.5
6.0	1	A	1⅝	1¼	4.4	1	C	1⅝	3¼	11.9
6.2	1	A	1⅝	1¼	4.5	1	C	1⅝	3¼	12.3
6.4	1	A	1⅝	1¼	4.7	1	C	1⅝	3¼	12.7
6.6	1	A	1⅝	1¼	4.8	1	C	1⅝	3¼	13.3
6.8	1	A	1⅝	1¼	5.0	1	C	1⅝	3¼	13.8
7.4	2	D	2 7/16	2	9.5	2	E	2 7/16	3¼	18.8
8.6	2	D	2 7/16	2	10.0	2	E	2 7/16	3¼	19.5
9.4	2	D	2 7/16	2	10.5	2	E	2 7/16	3¼	22.3
11.0	2	D	2 7/16	2	12.3	2	E	2 7/16	3¼	24.3
12.4	2	D	2 7/16	2	14.5	2	E	2 7/16	3¼	29.0
15.4	2	D	2 7/16	2	17.3	2	E	2 7/16	3¼	33.0
18.4	2	D	2 7/16	2	22.0	2	E	2 7/16	3¼	41.5

	2 Grooves Face 1¾ Inches: Type	Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.	5 Grooves Face 4 Inches: Type	Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.
4.6	1	B	1⅝	2	5.4	1	C	1⅝	3¼	11.4
4.8	1	B	1⅝	2	5.8	1	C	1⅝	3¼	12.1
5.0	1	B	1⅝	2	6.1	1	C	1⅝	3¼	12.5
5.2	1	B	1⅝	2	6.4	1	C	1⅝	3¼	12.9
5.4	1	B	1⅝	2	6.8	1	C	1⅝	3¼	13.1
5.6	1	B	1⅝	2	7.0	1	C	1⅝	3¼	13.3
5.8	1	B	1⅝	2	7.2	1	C	1⅝	3¼	13.5
6.0	1	B	1⅝	2	7.3	1	C	1⅝	3¼	14.0
6.2	1	B	1⅝	2	7.4	1	C	1⅝	3¼	14.5
6.4	1	B	1⅝	2	7.5	1	C	1⅝	3¼	15.0
6.6	1	B	1⅝	2	7.6	1	C	1⅝	3¼	16.0
6.8	1	B	1⅝	2	7.8	1	C	1⅝	3¼	16.5
7.4	2	D	2 7/16	2	11.0	2	E	2 7/16	3¼	21.3
8.6	2	D	2 7/16	2	12.0	2	E	2 7/16	3¼	23.0
9.4	2	D	2 7/16	2	13.0	2	E	2 7/16	3¼	24.3
11.0	2	D	2 7/16	2	15.5	2	E	2 7/16	3¼	27.0
12.4	2	D	2 7/16	2	17.5	2	E	2 7/16	3¼	35.5
15.4	2	D	2 7/16	2	22.3	2	E	2 7/16	3¼	38.3
18.4	2	D	2 7/16	2	27.0	2	E	2 7/16	3¼	50.5

	3 Grooves Face 2½ Inches: Type	Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.	6 Grooves Face 4¾ Inches: Type	Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.
4.6	1	B	1⅝	2	6.9	1	C	1⅝	3¼	12.6
4.8	1	B	1⅝	2	7.4	1	C	1⅝	3¼	13.2
5.0	1	B	1⅝	2	7.9	1	C	1⅝	3¼	13.7
5.2	1	B	1⅝	2	8.5	1	C	1⅝	3¼	14.1
5.4	1	B	1⅝	2	8.9	1	C	1⅝	3¼	14.4
5.6	1	B	1⅝	2	9.2	1	C	1⅝	3¼	14.7
5.8	1	B	1⅝	2	9.5	1	C	1⅝	3¼	15.0
6.0	1	B	1⅝	2	9.7	1	C	1⅝	3¼	15.5
6.2	1	B	1⅝	2	9.9					
6.4	1	B	1⅝	2	10.1	1	C	1⅝	3¼	16.5
6.6	1	B	1⅝	2	10.3	1	C	1⅝	3¼	17.0
6.8	1	B	1⅝	2	10.5	1	C	1⅝	3¼	18.0
7.4	2	D	2 7/16	2	13.5	2	E	2 7/16	3¼	24.3
8.6	2	D	2 7/16	2	14.5	2	E	2 7/16	3¼	25.0
9.4	2	D	2 7/16	2	16.0	2	E	2 7/16	3¼	27.8
11.0	2	D	2 7/16	2	18.8	2	E	2 7/16	3¼	32.0
12.4	2	D	2 7/16	2	21.5	2	E	2 7/16	3¼	39.5
15.4	2	D	2 7/16	2	26.8	2	E	2 7/16	3¼	42.0
18.4	2	D	2 7/16	2	33.3	2	E	2 7/16	3¼	50.8

Stock and Standard Sheaves

If drive uses sheaves not carried in stock, purchaser can procure Standard (non-stock) sheaves made to order in any diameter and for any number of belts.

Standard groove spacing, ¾ inch.

Standard Keyseats

Diameter Shaft Inches	Width In.	Depth Inches Std.	Depth Inches Shal.	Diameter Shaft Inches	Width In.	Depth Inches Std.	Depth Inches Shal.
½ – 9/16	⅛	1/16	..	2 5/16 – 2¾	⅝	5/16	3/16
⅝ – ⅞	3/16	3/32	..	2 13/16 – 3¼	¾	⅛	3/16
15/16 – 1¼	¼	⅛	..	3 5/16 – 3¾	⅞	7/16	¼
1 5/16 – 1¾	⅜	3/16	..	3 13/16 – 4¼	1	½	¼
1 13/16 – 2¼	½	¼	⅛	.....	...	..	..

Pitch Diam. In.	2 Grooves Face 1¾ Inches: Type	Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.	5 Grooves Face 4 Inches: Type	Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.	8 Grooves Face 6¼ Inches: Type	Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.
5.4	1	P30	2½	3	13	1	P30	2½	3	18	1	P40	2½	4	27
5.6	1	P30	2½	3	14	1	P30	2½	3	19	1	P40	2½	4	28
5.8	1	P30	2½	3	15	1	P30	2½	3	20	1	P40	2½	4	30
6.0	1	P30	2½	3	16	1	P30	2½	3	22	1	P40	2½	4	31
6.2	1	P30	2½	3	17	1	P30	2½	3	23	1	P40	2½	4	33
6.4	1	P30	2½	3	18	1	P30	2½	3	24	1	P40	2½	4	35
6.6	1	P30	2½	3	19	1	P30	2½	3	25	1	P40	2½	4	37
6.8	1	P30	2½	3	20	1	P30	2½	3	27	1	P40	2½	4	39
7.0	1	P30	2½	3	21	1	P30	2½	3	28	1	P40	2½	4	42
8.6	2	S32	3½	3½	33	1	S32	3½	3½	45	1	T42	4	4½	66
11.0	2	S32	3½	3½	35	1	S32	3½	3½	47	1	T42	4	4½	89
13.6	2	S32	3½	3½	41	1	S32	3½	3½	56	1	T42	4	4½	95
16.0	2	S32	3½	3½	48	1	S32	3½	3½	62	1	T42	4	4½	99
20.0	2	S32	3½	3½	58	2	S32	3½	3½	81	2	T42	4	4½	120
25.0	2	S32	3½	3½	70	2	T42	4	4½	114	2	T52	4	5½	157
30.0	2	S32	3½	3½	87	2	T42	4	4½	142	2	T52	4	5½	190
38.0	2	S32	3½	3½	137	2	T42	4	4½	198	2	T52	4	5½	265

	3 Grooves Face 2½ Inches: Type	Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.	6 Grooves Face 4¾ Inches: Type	Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.	9 Grooves Face 7 Inches: Type	Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.
5.4	1	P30	2½	3	15	1	P30	2½	3	20	1	P40	2½	4	28
5.6	1	P30	2½	3	16	1	P30	2½	3	21	1	P40	2½	4	29
5.8	1	P30	2½	3	17	1	P30	2½	3	22	1	P40	2½	4	31
6.0	1	P30	2½	3	18	1	P30	2½	3	24	1	P40	2½	4	33
6.2	1	P30	2½	3	19	1	P30	2½	3	25	1	P40	2½	4	35
6.4	1	P30	2½	3	20	1	P30	2½	3	26	1	P40	2½	4	37
6.6	1	P30	2½	3	21	1	P30	2½	3	27	1	P40	2½	4	39
6.8	1	P30	2½	3	23	1	P30	2½	3	28	1	P40	2½	4	41
7.0	1	P30	2½	3	24	1	P30	2½	3	30	1	P40	2½	4	44
8.6	1	S32	3½	3½	40	1	S32	3½	3½	50	1	T42	4	4½	69
11.0	1	S32	3½	3½	42	1	S32	3½	3½	54	1	T42	4	4½	92
13.6	1	S32	3½	3½	47	1	S32	3½	3½	62	1	T42	4	4½	100
16.0	1	S32	3½	3½	52	1	S32	3½	3½	70	1	T42	4	4½	105
20.0	2	S32	3½	3½	72	2	S32	3½	3½	94	2	T42	4	4½	126
25.0	2	S32	3½	3½	80	2	T42	4	4½	125	2	T52	4	5½	165
30.0	2	S32	3½	3½	98	2	T42	4	4½	156	2	T52	4	5½	218
38.0	2	S32	3½	3½	149	2	T42	4	4½	216	2	T42	4	5½	289

	4 Grooves Face 3¼ Inches: Type	Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.	7 Grooves Face 5½ Inches: Type	Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.	10 Grooves Face 7¾ Inches: Type	Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.
5.4	1	P30	2½	3	17	1	P30	2½	3	22	1	P40	2½	4	30
5.6	1	P30	2½	3	18	1	P30	2½	3	23	1	P40	2½	4	31
5.8	1	P30	2½	3	19	1	P30	2½	3	24	1	P40	2½	4	32
6.0	1	P30	2½	3	20	1	P30	2½	3	26	1	P40	2½	4	34
6.2	1	P30	2½	3	21	1	P30	2½	3	27	1	P40	2½	4	36
6.4	1	P30	2½	3	22	1	P30	2½	3	28	1	P40	2½	4	40
6.6	1	P30	2½	3	23	1	P30	2½	3	29	1	P40	2½	4	42
6.8	1	P30	2½	3	25	1	P30	2½	3	30	1	P40	2½	4	44
7.0	1	P30	2½	3	26	1	P30	2½	3	32	1	P40	2½	4	46
8.6	1	S32	3½	3½	42	1	S32	3½	3½	53	1	T42	4	4½	59
11.0	1	S32	3½	3½	44	1	S32	3½	3½	57	1	T42	4	4½	95
13.6	1	S32	3½	3½	52	1	S32	3½	3½	70	1	T42	4	4½	105
16.0	1	S32	3½	3½	57	1	S32	3½	3½	77	1	T42	4	4½	109
20.0	2	S32	3½	3½	76	2	S32	3½	3½	102	2	T42	4	4½	141
25.0	2	S32	3½	3½	90	2	T42	4	4½	131	2	T52	4	5½	177
30.0	2	S32	3½	3½	112	2	T42	4	4½	163	2	T52	4	5½	231
38.0	2	S32	3½	3½	163	2	T42	4	4½	239	2	T52	4	5½	315

Gates V-Belt Drive Sheaves For C Section Belts

Made of cast iron.

Bores are available in increments of 1/16 inch up to the maximum listed in the tables.

Standard (non-stock) sheaves will be made to order in any diameter, number of grooves, and bore desired.

Standard groove spacing is 1 inch on C sheaves.

Keyseats

Sheaves are regularly furnished with one straight keyseat and hollow head set screw with wrench. When taper keyseats are specified, the deep end will have standard depth, as shown in table, with taper of 1/8-inch per foot of length.

Standard Keyseats

Diameter Shaft Inches	Width Inches	Depth, In. Standard	Depth, In. Shallow
1/2 – 9/16	1/8	1/16	..
5/8 – 7/8	3/16	3/32	..
15/16–1 1/4	1/4	1/8	..
1 5/16 –1 3/4	3/8	3/16	..
1 13/16–2 1/4	1/2	1/4	1/8
2 5/16 –2 3/4	5/8	5/16	3/16
2 13/16–3 1/4	3/4	3/8	3/16
3 5/16 –3 3/4	7/8	7/16	1/4
3 13/16–4 1/4	1	1/2	1/4
4 5/16 –4 3/4	1 1/8	9/16	1/4
4 13/16–5 1/4	1 1/4	5/8	1/4
5 5/16 –5 3/4	1 3/8	11/16	1/4
5 13/16–6 1/4	1 1/2	3/4	1/4
.....	...	..	..

Stock Sheaves

Pitch Diam. In.	Type	3 Grooves Face 3 3/8 In. Bush No.	Max. Bore In.	Width Hub. In.	Wt. Lb.	4 Grooves Face 4 3/8 In. Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.	5 Grooves Face 5 3/8 In. Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.	6 Grooves Face 6 3/8 In. Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.
9.0	1	S32	3 1/2	3 1/2	45	S32	3 1/2	3 1/2	51	S32	3 1/2	3 1/2	56	S50	3 1/2	5	77
9.2	1	S32	3 1/2	3 1/2	46	S32	3 1/2	3 1/2	51	S32	3 1/2	3 1/2	56	S50	3 1/2	5	77
9.4	1	S32	3 1/2	3 1/2	46	S32	3 1/2	3 1/2	51	S32	3 1/2	3 1/2	55	S50	3 1/2	5	79
9.6	1	S32	3 1/2	3 1/2	47	S32	3 1/2	3 1/2	52	S32	3 1/2	3 1/2	55	S50	3 1/2	5	75
9.8	1	S32	3 1/2	3 1/2	48	S32	3 1/2	3 1/2	52	S32	3 1/2	3 1/2	56	S50	3 1/2	5	77
10.0	1	S32	3 1/2	3 1/2	49	S32	3 1/2	3 1/2	53	S32	3 1/2	3 1/2	57	S50	3 1/2	5	81
10.2	1	S32	3 1/2	3 1/2	50	S32	3 1/2	3 1/2	53	S32	3 1/2	3 1/2	59	S50	3 1/2	5	83
10.6	1	S32	3 1/2	3 1/2	51	S32	3 1/2	3 1/2	56	S32	3 1/2	3 1/2	61	S50	3 1/2	5	89
13.0	1	S32	3 1/2	3 1/2	50	S32	3 1/2	3 1/2	57	S32	3 1/2	3 1/2	64	T52	4	5 1/2	97
16.0	1	S32	3 1/2	3 1/2	62	S32	3 1/2	3 1/2	67	S50	3 1/2	5	91	T52	4	5 1/2	109
20.0	1	S32	3 1/2	3 1/2	77	S32	3 1/2	3 1/2	89	S50	3 1/2	5	119	T52	4	5 1/2	139
24.0	2	S32	3 1/2	3 1/2	94	S32	3 1/2	3 1/2	107	S50	3 1/2	5	141	T52	4	5 1/2	160
30.0	2	S32	3 1/2	3 1/2	123	S32	3 1/2	3 1/2	138	S50	3 1/2	5	176	T52	4	5 1/2	209
36.0	2	T42	4	4 1/2	181	T42	4	4 1/2	195	T52	4	5 1/2	241	V62	4 1/2	6 1/2	278
44.0	2	T42	4	4 1/2	229	T42	4	4 1/2	260	T52	4	5 1/2	293	V62	4 1/2	6 1/2	340
50.0	2	T42	4	4 1/2	254	T52	4	5 1/2	298	T52	4	5 1/2	333	V62	4 1/2	6 1/2	384
56.0	2	T42	4	4 1/2	333	T52	4	5 1/2	379	T52	4	5 1/2	403	V62	4 1/2	6 1/2	514
64.0	2	T52	4	5 1/2	385	T52	4	5 1/2	459	T52	4	5 1/2	489	V62	4 1/2	6 1/2	609

Pitch Diam. In.	Type	7 Grooves Face 7 3/8 In. Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.	8 Grooves Face 8 3/8 In. Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.	9 Grooves Face 9 3/8 In. Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.	10 Grooves Face 10 3/8 In. Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.
9.0	1	S50	3 1/2	5	80	S50	3 1/2	5	85	S70	3 1/2	7	110	S70	3 1/2	7	114
9.2	1	S50	3 1/2	5	81	S50	3 1/2	5	85	S70	3 1/2	7	114	S70	3 1/2	7	119
9.4	1	S50	3 1/2	5	82	S50	3 1/2	5	90	S70	3 1/2	7	117	S70	3 1/2	7	123
9.6	1	S50	3 1/2	5	81	S50	3 1/2	5	91	S70	3 1/2	7	120	S70	3 1/2	7	128
9.8	1	S50	3 1/2	5	80	S50	3 1/2	5	92	S70	3 1/2	7	124	S70	3 1/2	7	129
10.0	1	S50	3 1/2	5	86	S50	3 1/2	5	93	S70	3 1/2	7	128	S70	3 1/2	7	134
10.2	1	S50	3 1/2	5	93	S50	3 1/2	5	97	S70	3 1/2	7	135	S70	3 1/2	7	140
10.6	1	S50	3 1/2	5	96	S50	3 1/2	5	103	S70	3 1/2	7	144	S70	3 1/2	7	150
13.0	1	T52	4	5 1/2	104	T52	4	5 1/2	112	V72	4 1/2	7 1/2	141	V72	4 1/2	7 1/2	175
16.0	1	T52	4	5 1/2	124	T52	4	5 1/2	148	V72	4 1/2	7 1/2	175	V72	4 1/2	7 1/2	202
20.0	1	T52	4	5 1/2	148	T52	4	5 1/2	172	V72	4 1/2	7 1/2	210	V72	4 1/2	7 1/2	231
24.0	2	T52	4	5 1/2	176	T52	4	5 1/2	200	V72	4 1/2	7 1/2	243	V72	4 1/2	7 1/2	249
30.0	2	T52	4	5 1/2	230	T52	4	5 1/2	264	V72	4 1/2	7 1/2	308	V72	4 1/2	7 1/2	322
36.0	2	V62	4 1/2	6 1/2	326	V62	4 1/2	6 1/2	349	W82	5	8 1/2	396	W82	5	8 1/2	423
44.0	2	V62	4 1/2	6 1/2	366	V62	4 1/2	6 1/2	413	W82	5	8 1/2	483	W82	5	8 1/2	518
50.0	2	V62	4 1/2	6 1/2	417	V62	4 1/2	6 1/2	462	W82	5	8 1/2	564	W82	5	8 1/2	608
56.0	2	V72	4 1/2	7 1/2	561	V72	4 1/2	7 1/2	636	W82	5	8 1/2	706	W82	5	8 1/2	755
64.0	2	V72	4 1/2	7 1/2	663	V72	4 1/2	7 1/2	756	W82	5	8 1/2	845	W82	5	8 1/2	905

Pitch Diam. In.	Type	11 Grooves Face 11 3/8 In. Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.	12 Grooves Face 12 3/8 In. Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.	13 Grooves Face 13 3/8 In. Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.	14 Grooves Face 14 3/8 In. Bush No.	Max. Bore In.	Width Hub In.	Wt. Lb.
9.0	1	S70	3 1/2	7	116	S70	3 1/2	7	121	S70	3 1/2	7	127	S70	3 1/2	7	129
9.2	1	S70	3 1/2	7	121	S70	3 1/2	7	125	S70	3 1/2	7	130	S70	3 1/2	7	134
9.4	1	S70	3 1/2	7	126	S70	3 1/2	7	130	S70	3 1/2	7	131	S70	3 1/2	7	140
9.6	1	S70	3 1/2	7	129	S70	3 1/2	7	132	S70	3 1/2	7	146	S70	3 1/2	7	152
9.8	1	S70	3 1/2	7	132	S70	3 1/2	7	137	S70	3 1/2	7	150	S70	3 1/2	7	157
10.0	1	S70	3 1/2	7	143	S70	3 1/2	7	146	S70	3 1/2	7	158	S70	3 1/2	7	162
10.2	1	S70	3 1/2	7	145	S70	3 1/2	7	152	S70	3 1/2	7	160	S70	3 1/2	7	164
10.6	1	S70	3 1/2	7	152	S70	3 1/2	7	162	S70	3 1/2	7	170	S70	3 1/2	7	174
13.0	1	V72	4 1/2	7 1/2	200	V72	4 1/2	7 1/2	211	V72	4 1/2	7 1/2	229	V72	4 1/2	7 1/2	234
16.0	1	V72	4 1/2	7 1/2	210	V72	4 1/2	7 1/2	215	V72	4 1/2	7 1/2	226	V72	4 1/2	7 1/2	241
20.0	1	V72	4 1/2	7 1/2	242	V72	4 1/2	7 1/2	253	V72	4 1/2	7 1/2	259	V72	4 1/2	7 1/2	279
24.0	2	V72	4 1/2	7 1/2	294	W82	5	8 1/2	310	W82	5	8 1/2	329	W82	5	8 1/2	353
30.0	2	V72	4 1/2	7 1/2	343	W82	5	8 1/2	379	W82	5	8 1/2	404	W82	5	8 1/2	432
36.0	2	W82	5	8 1/2	469	W82	5	8 1/2	472	W82	5	8 1/2	501	W82	5	8 1/2	524
44.0	2	W82	5	8 1/2	557	W82	5	8 1/2	590	W82	5	8 1/2	621	W100	5	10	669
50.0	2	W82	5	8 1/2	633	W100	5	10	704	W100	5	10	761	W100	5	10	779
56.0	2	W82	5	8 1/2	858	W100	5	10	928	W100	5	10	1001	W100	5	10	1033
64.0	2	W82	5	8 1/2	1031	W100	5	10	1072	W100	5	10	1172	W100	5	10	1272

Gates Interchangeable Hub Vulco Steel Sheaves

For Single Belt Drives with Vulco Cord V-Belts

Types 1 and 2 are turned steel sheaves furnished with ¼-inch hollow head hexagonal set screws. Types 3 and 4 are formed steel sheaves furnished with ¼-inch hollow head hexagonal set screws in 1⅝-inch hub, ⅜-inch in 2³⁄₁₆-inch hub. Type 3 sheave has a web center. Type 4 sheave has a spoke center.

Formed steel sheaves from 3¾ to 7 inches inclusive will take only the 1⅝-inch hub which has a maximum bore of 1 inch; from 8 to 12 inches inclusive will take either 1⅝-inch hub or 2³⁄₁₆-inch hub which has a maximum bore of 1½ inches, from 15 to 19 inches inclusive will take only 2³⁄₁₆-inch hub which has a maximum bore of 1½ inches.

Standard key-ways: for ⅜ and ½-inch bores, no key-way; for ⅝, ¾, and ⅞-inch bores, ³⁄₁₆x³⁄₃₂-inch key-way; for ¹⁵⁄₁₆, 1, 1⅛, 1³⁄₁₆, and 1¼-inch bores, ¼x⅛-inch key-way; and for 1⅜, 1⁷⁄₁₆, and 1½-inch bores, ⅜x³⁄₁₆-inch key-way.

All sheaves furnished with standard key-way. If non-standard key-way is needed, use offset key.

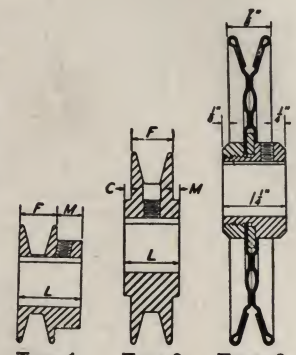
Sheaves marked "x" include price of hub.

Prices given for sheaves from 3¾ to 12 inches inclusive include price of a 1⅝-inch hub with maximum bore of 1 inch. Sheaves from 8 to 12 inches inclusive may be obtained with the 2³⁄₁₆-inch hub with maximum bore of 1½ inches for an addition to price of 70 cents. Prices given for sheaves from 15 to 19 inches inclusive include price of a 2³⁄₁₆-inch hub.

To obtain price of rim only, subtract 90 cents from prices shown for sheaves from 3¾ to 12 inches inclusive and $1.60 from prices shown for sheaves from 15 to 19 inches inclusive.

†Hub only.

*Add 70 cents to price because a 2³⁄₁₆-inch hub is required.



Type 1 Turned Steel — Type 2 Turned Steel — Types 3 and 4 Formed Steel

Type A

O.D. In.	Each	Stock Bores, Inches ⅜	½	⅝	¾	⅞	¹⁵⁄₁₆	1	1⅛	1³⁄₁₆	1¼	1⅜	1⁷⁄₁₆	1½	Pitch Diam. In.	Type	Dimensions, Inches F	L	M	C	Max. Bore In.	Wt. Lb
1⅝	$.59	x	x	x	x	..	..	..	..	..	..	..	..	..	1.48	1	21⁄32	1	11⁄32	..	⅝	.3
1¾	.69	x	x	x	x	..	..	..	..	..	..	..	..	..	1.60	1	21⁄32	1	11⁄32	..	¾	.3
2	.73	x	x	x	x	..	..	..	..	..	..	..	..	..	1.85	1	21⁄32	1 1⁄16	13⁄32	..	¾	.4
2¼	.81	x	x	x	x	..	..	..	..	..	..	..	..	..	2.10	1	21⁄32	1 1⁄16	13⁄32	..	¾	.6
2½	.90	x	x	x	x	..	..	..	..	..	..	..	..	..	2.35	1	21⁄32	1 1⁄16	13⁄32	..	¾	.7
2¾	.94	..	x	x	x	..	..	..	..	..	..	..	..	..	2.60	2	21⁄32	7⁄8	7⁄64	7⁄64	¾	.8
3	1.06	..	x	x	x	..	..	..	..	..	..	..	..	..	2.85	2	21⁄32	7⁄8	7⁄64	7⁄64	¾	.9
3¼	1.26	..	x	x	x	..	..	..	..	..	..	..	..	..	3.10	2	21⁄32	7⁄8	7⁄64	7⁄64	¾	1.1
3½	1.38	..	x	x	x	..	..	..	..	..	..	..	..	..	3.35	2	21⁄32	7⁄8	7⁄64	7⁄64	¾	1.3
3¾	1.53	..	x	x	x	x	x	x	..	..	..	..	..	..	3.60	3	7⁄8	1¼	3⁄16	⅛	1	1.2
4	1.57	..	x	x	x	x	x	x	..	..	..	..	..	..	3.85	3	7⁄8	1¼	3⁄16	⅛	1	1.3
4¼	1.62	..	x	x	x	x	x	x	..	..	..	..	..	..	4.10	3	7⁄8	1¼	3⁄16	⅛	1	1.4
4½	1.66	..	x	x	x	x	x	x	..	..	..	..	..	..	4.35	3	7⁄8	1¼	3⁄16	⅛	1	1.5
4¾	1.71	..	x	x	x	x	x	x	..	..	..	..	..	..	4.60	3	7⁄8	1¼	3⁄16	⅛	1	1.6
5	1.79	..	x	x	x	x	x	x	..	..	..	..	..	..	4.85	3	7⁄8	1¼	3⁄16	⅛	1	1.7
5¼	1.88	..	x	x	x	x	x	x	..	..	..	..	..	..	5.10	3	7⁄8	1¼	3⁄16	⅛	1	1.7
5½	1.93	..	x	x	x	x	x	x	..	..	..	..	..	..	5.35	3	7⁄8	1¼	3⁄16	⅛	1	1.8
5¾	2.00	..	x	x	x	x	x	x	..	..	..	..	..	..	5.60	3	7⁄8	1¼	3⁄16	⅛	1	1.9
6	2.06	..	x	x	x	x	x	x	..	..	..	..	..	..	5.85	3	7⁄8	1¼	3⁄16	⅛	1	2.0
6½	2.12	..	x	x	x	x	x	x	..	..	..	..	..	..	6.35	3	7⁄8	1¼	3⁄16	⅛	1	2.2
7	2.29	..	x	x	x	x	x	x	..	..	..	..	..	..	6.85	3	7⁄8	1¼	3⁄16	⅛	1	2.5
8	2.67	..	x	x	x	x	x	x	*	*	*	*	*	*	7.85	3	7⁄8	1¼	3⁄16	⅛	1	3.1
9	2.90	..	x	x	x	x	x	x	*	*	*	*	*	*	8.85	3	7⁄8	1¼	3⁄16	⅛	1	3.6
10	3.41	..	x	x	x	x	x	x	*	*	*	*	*	*	9.85	4	7⁄8	1¼	3⁄16	⅛	1	3.3
12	4.38	..	x	x	x	x	x	x	*	*	*	*	*	*	11.85	4	7⁄8	1¼	3⁄16	⅛	1	3.7
15	6.08	..	x	x	x	x	x	x	x	x	x	x	x	x	14.85	4	7⁄8	1⅝	⅝	⅛	1½	4.9
17½	7.07	..	x	x	x	x	x	x	x	x	x	x	x	x	17.35	4	7⁄8	1⅝	⅝	⅛	1½	6.9
19	7.86	..	x	x	x	x	x	x	x	x	x	x	x	x	18.85	4	7⁄8	1⅝	⅝	⅛	1½	7.5
†1⅝	.90	..	x	x	x	x	x	x	..	..	..	..	..	..	.....	..	...	...	..	..	...	.5
†2³⁄₁₆	1.60	..	x	x	x	x	x	x	x	x	x	x	x	x	.....	..	...	...	..	..	...	1.3

Type B

O.D. In.	Each	⅜	½	⅝	¾	⅞	¹⁵⁄₁₆	1	1⅛	1³⁄₁₆	1¼	1⅜	1⁷⁄₁₆	1½	Pitch Diam. In.	Type	F	L	M	C	Max. Bore In.	Wt. Lb
2¼	$.97	..	x	x	x	..	..	..	..	..	..	..	..	..	1.95	1	25⁄32	1 3⁄16	13⁄32	..	¾	.6
2½	1.07	..	x	x	x	..	..	..	..	..	..	..	..	..	2.20	1	25⁄32	1 3⁄16	13⁄32	..	¾	.7
2¾	1.12	..	x	x	x	..	..	..	..	..	..	..	..	..	2.45	2	25⁄32	1	7⁄64	7⁄64	¾	.8
3	1.27	..	x	x	x	..	..	..	..	..	..	..	..	..	2.70	2	25⁄32	1	7⁄64	7⁄64	¾	.9
3¼	1.52	..	x	x	x	..	..	..	..	..	..	..	..	..	2.95	2	25⁄32	1	7⁄64	7⁄64	¾	1.1
3½	1.66	..	x	x	x	..	..	..	..	..	..	..	..	..	3.20	2	25⁄32	1	7⁄64	7⁄64	¾	1.3
3¾	1.79	..	x	x	x	x	x	x	..	..	..	..	..	..	3.45	3	1 1⁄32	1 3⁄16	7⁄64	3⁄64	1	1.2
4	1.84	..	x	x	x	x	x	x	..	..	..	..	..	..	3.70	3	1 1⁄32	1 3⁄16	7⁄64	3⁄64	1	1.3
4¼	1.94	..	x	x	x	x	x	x	..	..	..	..	..	..	3.95	3	1 1⁄32	1 3⁄16	7⁄64	3⁄64	1	1.4
4½	1.98	..	x	x	x	x	x	x	..	..	..	..	..	..	4.20	3	1 1⁄32	1 3⁄16	7⁄64	3⁄64	1	1.5
4¾	2.06	..	x	x	x	x	x	x	..	..	..	..	..	..	4.45	3	1 1⁄32	1 3⁄16	7⁄64	3⁄64	1	1.6
5	2.10	..	x	x	x	x	x	x	..	..	..	..	..	..	4.70	3	1 1⁄32	1 3⁄16	7⁄64	3⁄64	1	1.7
5¼	2.12	..	x	x	x	x	x	x	..	..	..	..	..	..	4.95	3	1 1⁄32	1 3⁄16	7⁄64	3⁄64	1	1.7
5½	2.15	..	x	x	x	x	x	x	..	..	..	..	..	..	5.20	3	1 1⁄32	1 3⁄16	7⁄64	3⁄64	1	1.8
5¾	2.19	..	x	x	x	x	x	x	..	..	..	..	..	..	5.45	3	1 1⁄32	1 3⁄16	7⁄64	3⁄64	1	1.9
6	2.37	..	x	x	x	x	x	x	..	..	..	..	..	..	5.70	3	1 1⁄32	1 3⁄16	7⁄64	3⁄64	1	2.0
6½	2.50	..	x	x	x	x	x	x	..	..	..	..	..	..	6.20	3	1 1⁄32	1 3⁄16	7⁄64	3⁄64	1	2.2
7	2.63	..	x	x	x	x	x	x	..	..	..	..	..	..	6.70	3	1 1⁄32	1 3⁄16	7⁄64	3⁄64	1	2.5
8	2.81	..	x	x	x	x	x	x	*	*	*	*	*	*	7.70	3	1 1⁄32	1 3⁄16	7⁄64	3⁄64	1	3.1
9	3.26	..	x	x	x	x	x	x	*	*	*	*	*	*	8.70	3	1 1⁄32	1 3⁄16	7⁄64	3⁄64	1	3.6
10	3.75	..	x	x	x	x	x	x	*	*	*	*	*	*	9.70	4	1 1⁄32	1 3⁄16	7⁄64	3⁄64	1	3.3
12	4.73	..	x	x	x	x	x	x	*	*	*	*	*	*	11.70	4	1 1⁄32	1 3⁄16	7⁄64	3⁄64	1	3.7
15	6.70	..	x	x	x	x	x	x	x	x	x	x	x	x	14.70	4	1 1⁄32	1⅝	9⁄16	1⁄32	1½	5.6
17½	7.80	..	x	x	x	x	x	x	x	x	x	x	x	x	17.20	4	1 1⁄32	1⅝	9⁄16	1⁄32	1½	7.6
19	8.70	..	x	x	x	x	x	x	x	x	x	x	x	x	18.70	4	1 1⁄32	1⅝	9⁄16	1⁄32	1½	8.2
†1⅝	.90	..	x	x	x	x	x	x	..	..	..	..	..	..	.....	..	...	...	..	..	...	.5
†2³⁄₁₆	1.60	..	x	x	x	x	x	x	x	x	x	x	x	x	.....	..	...	...	..	..	...	1.3

No. 1 Eagle Lard Cutting Oil

Provided especially for the use of the master plumber.

Gives excellent service on either hand or machine cutting and threading.

This oil is made to reduce friction heat in cutting surfaces, thereby guaranteeing sufficient temper, better cutting and longer life in cutting tools.

Size Cans	Per Gallon	Size Drums	Per Gallon
1–Gallon	....	20–Gallon	....
5–Gallon	....	33–Gallon	....
10–Gallon	....	55–Gallon	....

Sulflo Cutting Oil

Sulflo makes die stocks and cut-off tools pull easier. Makes smoother, better formed threads and tighter joints. Contains suspended sulphur, a high temperature lubricant. Leaves work clean; does not allow tool to chew into the metal. It cuts to size.

Size Container	Each
*1-Pt. Squirt Can	$.30
1-Qt. Can	.40
½-Gal. Can	.75
1-Gal. Can	1.15
5-Gal. Pail	†1.00
15-Gal. Drums	†.90
30-Gal. Drums	†.80
55-Gal. Drums	†.70

*Eight 1-pt. Squirt Cans, $2.00.

†Price per gallon.

Ridgoil Thread Cutting Oil

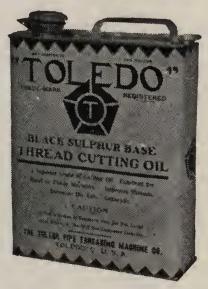
Used for cutting smooth, clean threads on iron, steel, or brass pipe.

Penetrates quickly, cools and lubricates, and is antiseptic, preventing risk of infection. Will not congeal above 20°F. Saves cutting blades.

Supplied in cans.

Size Container Gallons	Dark Each	Nu-Clear Each
1	$1.10	$1.20
5	4.63	5.09
30	20.00	22.00
55	33.52	37.00

Toledo Black Sulphur Base Thread Cutting Oil



Will not turn rancid. Assures smooth, clean threads, tight joints and increased die service. Especially good for hand tools or power machines.

1 Gallon Cans or 1 Gallon Glass Jugs.....per gallon $1.10
1 Pint Can with Spout (12 to a case).....each .35

Wilbur & Williams Penetrating Oil

Used for loosening rusted connections, valves, nuts, tools, etc.; preventing rust and corrosion when sprayed on machinery and tools; dipping metal parts before shipping; maintaining continuous oil film in valves, pumps, tools, lawnmowers, etc.; and breaking in new or rebored motors.

Size Can	1-Qt.	1-Pt.	4-Oz.
Each	$1.35	.85	.30
No. Cans in Case	12	12	24

Beaver Threading Oil

For Hand Tools and Threading Machines

A sulphur-base threading oil (high in heat-absorbing properties) that both cools and lubricates. Improper oil causes overheating, chipped dies and bad threads.

Size Can...gals.	1	5	15	30	55
Each	$1.10	5.50	15.00	30.00	55.00
Ship. Wt....lbs.	9	41	128	255	500

Dixon's Ticonderoga Flake Lubricating Graphite

Used by power plant engineers and others for lubrication and coating gaskets, packing, etc.

Furnished in particle size No. 1 in large, unctuous, lustrous flakes; or No. 2 in finely subdivided, powdered flakes. Specify No. 1 or 2 when ordering.

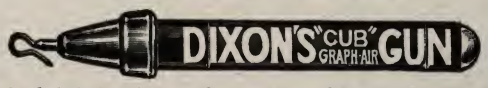
The 25, 50, 100 and 200-lb. quantities furnished in drums, all other sizes in cans.

Larger containers, prices upon application.

No.	631	632	633	634	644	645	646	646½
Per Pound	$.43	.64	.58	.53	.49	.44	.43	.42
Size Container..lb.	½	1	5	10	25	50	100	200
No. per case	36	36	10	5	..	..	..	..

Dixon's Cub Graph-Air Guns

Graphite Powder Lubricators



For lock lubrication and squeak and friction killing jobs. Just squeeze to eject the graphite.

Filled with microfyne flake lubricating graphite.

Each..... $.10

Dixon's Pipe Joint Graphite Compound

Water insoluble. Functions both as a lubricant and a seal on all threaded, gasketed and flange pipe and other joints to make them tight against hot and cold water, all aqueous solvents, steam, air, gas, acids, alkalies and brine.

Assures quick easy assembling and disassembling of connections without damage to gaskets or fittings.

The ¼-pound quantity furnished in tubes, 25 and 60-pound quantities in drums, all other sizes in cans.

Size Container.....lb.	¼	1	5	10	25	60
Per Pound	*$.25	.35	.30	.28	.26	.24
No. per Case	36	36	10	6	...	...

*Price per tube.

In larger containers, prices upon application.

T.S.Co. Pipe Joint Cement

A pink colored, ready-mixed cement made expressly for use on steam, gas and water pipes, flanges, gaskets, bolts and screws.

Makes a tight joint and resists all forms of corrosion, making disconnection possible after years of service without damage to pipe or fittings.

Will not harden in the can.

Size Can.....pounds	1	5	100
Per Pound.....	...	...	...
Shipping Weight.....pounds	1¼	5½	105

Key Graphite Paste

For all screw thread and gasket joints. Used in all steam plant and boiler connections, hot oil and hot air lines, internal combustion engines, pumps, oil burning equipment, or any high temperature service. Holds joint leak proof against oils, acids and gases which penetrate ordinary oil mixed compounds. Does work of red and white lead, graphite, oil, shellac, litharge, glycerine, etc. Needs water only for thinning.

	Each	No. in Case	Net Wt. Lb. per Case
¼-Lb. Cans.....	$.28	144	36
⅝-Lb. Handy Kit...	.50	48	30
1-Lb. Cans.....	.85	36	36
3-Lb. Cans.....	1.95	24	72
10-Lb. Cans.....	5.00	6	60
100-Lb. Drums.....	25.00	...	...
400 to 700-Lb. Barrels.....lb.			$.15

Key-Tite Waterproof Pipe Joint Compound

Key-Tite Pipe Joint Compound will effectively seal screw thread and gasket joints for such service as gas, water, steam, compressed air, etc.

It is not a quick hardening cement, but a plastic lubricant and filler that will seal the most obstinate joint with ease.

Covers more surface than lead mixtures and is more economical.

½-Pint Can.....each	$.28
1-Pint Can.....each	.45
1-Quart Can.....each	.83
1-Gallon Can.....each	2.80
100-Pound Drum.....each	19.60
400-Pound Drum.....per lb.	.17½

X-Pando Pipe Joint Compound

A prepared compound, that expands as it sets. Ends leaks permanently. The expansion of the compound corrects imperfections in threads and flanged surfaces.

One formula only for use on all types of joints—threaded, flanged, bell and spigot. Holds any material carried in metal pipe except the heaviest of acids. Not affected by vibration. Withstands deflection, pressure and high temperatures.

No gaskets or wicking required. Odorless, and non-inflammable.

Size Container.....pounds	1	5	10	25	50	100
Per Pound.....	$.60	.50	.45	.40	.37½	.35
No. of Cans Packed in Case	24	6	4	...	...	...
Ship Wt. per Case.....lb.	30	36	47	28	55	107

Arco Pipe Joint Compound

Arco Jointite is recommended for plumbers, steamfitters, etc. Made by combining extremely finely ground pigments with especially treated durable water repelling oils that remain elastic and do not taint the water. Does not dry out. It lubricates the joint, fills the spiral channel and makes the pipe joint watertight. Pipes can be disjointed after years of service by an easy pull on the wrench and other pipes will not be disturbed.

Should be applied to pipe threads as well as to fitting thread; this insures an even distribution of compound and a tight joint. Resists action of acids and alkalies; not affected by electrolysis, prevents corrosion of threads.

Size container.....pounds	1	5	50	115
Each.....	....	....	....	....

Utility Pipe Joint Compound

An efficient joint cement for use on all threaded connections on steam, oil, gas and hydraulic lines. Especially recommended for use on brass. Its metallic base ground in oil, forms a lubricating as well as a sealing medium. Will remain plastic on hot or cold pipes and will not crack, crumble or shrink. Insures perfectly tight joints at all times and prevents freezing of fittings to pipe threads.

25-pound quantity is packed in drums; other quantities are furnished in cans.

Size Containers.....lbs.	1	2	5	10	25
Each.....	$.50	.90	2.20	4.20	10.00
No. to Case.....	50	48	12	6	1
Shipping Weight per Case.lbs.	58	100	73	73	27

G-K Sewer Joint Compound

A positive, permanent, pliable pipe joint for vitrified tile and concrete sewer pipe.

It is as permanent as vitrified tile, not affected by water, sewage, acids, or the ordinary constituents of soil. Will not become brittle with age, but always retains a certain degree of flexibility.

G-K Compound renders the laying of subdrains unnecessary, by preventing infiltration regardless of the head of ground water.

Will prevent the growth of such roots as are ordinarily found in temperate climates.

Makes a water-tight sanitary sewer and prevents pollution of the ground on either side of the sewer line.

Quantities of Compound Required per Joint for Connecting A.S.T.M. Standard Vitrified Pipe

Size Pipe Inches	Depth Joint Inches	Compound Cubic Inches	Jute Pounds	*Compound Pounds
4	1¼	8.2	.03	.52
6	1¾	19.2	.04	1.22
8	1¾	31.2	.15	1.98
10	1¾	38.1	.26	2.42
12	1¾	48.2	.31	3.07
15	1¾	55.	.40	3.5
18	2¼	83.7	.47	5.31
21	2¼	120.1	.65	7.59
24	2¼	136.5	.74	8.58
27	2½	202.2	1.29	12.87
30	2½	250.	1.65	15.9
33	3	328.	1.76	19.5
36	3	450.	2.44	28.8

*This calculation is based on 10% excess for possible waste.

Kalktite Asphalt Plastic Compound

For satisfactory, flexible acid and root resisting sewer joints.

Reduces infiltration of ground water. Sets-up or hardens internally under water without pre-heating to high break down temperature. Not soluble in water and will not wash away. Readily adheres to pipe. No shrinkage.

Contains an ingredient very poisonous to vegetation.

Consists of two elements—Kalktite Dry Asphalt, a pure pulverized asphalt blended with acid resistant mineral fillers and Kalktite Liquid Asphalt, a blend of non-volatile oils and life imparting asphalt. These two materials are mixed on the job in specified proportions to a consistency about like a stiff mortar.

Easily workable with the hands or a trowel.

Shipped in 125-pound units consisting of one 97-pound bag Kalktite Dry Asphalt and one 28-pound drum Kalktite Liquid Asphalt.

Prices upon application.

TiteSeal Gasket and Joint-Sealing Compound

A non-hardening, indestructible compound. Will not shrink or crack; vibration-proof and heat-proof. Used by plumbing, heating, and refrigerating trades. Prevents liquid and gas leaks.

Light Weight for cementing threaded pipe joints.

Medium weight used with gaskets or as a gasket to seal valves, pumps, tanks, etc.

Heavy weight used for heavy gasketing, and as a caulking compound.

Container...	*1-Oz. Tube	*2-Oz. Tube	†4-Oz. Can	*8-Oz. Tube	1-Lb. Can	5-Lb. Can
Each.....	$.25	.40	.60	1.00	1.60	7.50
No. in Carton.	12	12	12	6	6	6

*Light and medium wt. only. †Heavy wt. only.

Combination, consisting of 1-pound can each of light, medium and heavy weight TiteSeal and 1-pint can of Brush-On TiteSeal. each. **$6.55**

X-Pandotite

An Interior Repair Cement

An all-purpose, white cement. By expanding, it forces its way into the pores of tile, wood, or other surfaces.

Repairs cracks in plaster, around bathtubs, for setting tile, anchoring, etc. Also for casting purposes.

Contains no plaster. Makes a leak-proof, vibration-proof bond. Unaffected by water, steam or heat.

May be colored.

Size Container.....lb.	½	1	5	10	25	50
Per Pound.....	$.35	.60	.50	.45	.40	.37½
Number in Case.....	48	24	6	4	...	...
Ship.Wt.per Case.....lb.	33	30	36	47	28	55

Tilette Liquid Porcelain Glaze

Repairs unsightly chips in porcelain and enamel sinks, bathtubs, lavatories, refrigerators, drainboards, tabletops, etc. Not recommended for repairs on stoves around ovens or gas plates.

It is easy to apply and dries quickly with a permanent gloss.

Colored fixtures can be matched by adding colors ground in oil.

1-Ounce Jar, for Household Use.....each **$.25**

4-Ounce Can, for Professional Use.....each **.75**

T.S.Co. Stove and Furnace Plastic Cement

An odorless, indestructible, fire and acid-proof compound.

Used for mounting furnaces, heaters and stoves.

Also used for cementing joints exposed to intense heat.

Will not shrink or crack.

Makes a gas-tight joint.

Packed in 5-pound cans.

Shipping weight, 5½ pounds.

Per Pound..... ....

Smooth-On Iron Cements

No. 1 is a quick-hardening iron cement used by mixing with water. For repairing breaks in castings, making tight joints and seams, and stopping leaks in boilers, pipe lines, pressure containers, etc. Becomes hard as iron when metallized, and expands at the same rate. May be used on iron, brass, steel, copper, lead, aluminum, etc., either alone or as a filling compound under a plate, and will withstand fire, water, steam, oil, and high pressures. In powder form.

No. 2 is a slow-hardening hydraulic iron cement for the same uses as No. 1. In powder form.

No. 3 is for making screw-thread joints, coating gaskets, and sealing rivets, seams and joints in boilers, etc. Lubricates in assembling screw threads. In paste form.

No. 4 is for filling surface defects in castings; No 4AA is light gray with high-metallic lustre, No. 4A medium gray with medium lustre, and No. 4B dark gray. Powder form.

No. 5 is used by mixing with water. For caulking bell- and -spigot joints in cast iron soil, water, or gas pipes. Requires no heat. In powder form.

No. 6 is a dark gray plastic iron putty, sold ready for use for making water-tight joints on sky and vault lights, for filling in seams, rivet heads and for setting glass in metal frames, etc.

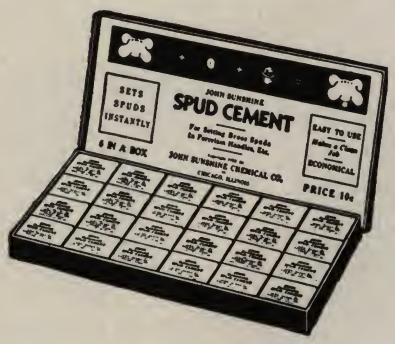
No. 7 is a hydraulic iron cement for waterproofing porous cellar walls from the inside, on wet or dry surfaces, and making hard dustproof and oilproof concrete floors. Especially useful for floors in garages, where oil is usually spilled and heavy tools allowed to drop. In powder form.

Available in 1 and 5-pound tins and 25 and 100-pound kegs, with the exception of No. 3 and No. 6, which are not packed in 100-pound kegs.

No.....	*1	2	3	4AA	4A	4B	5	6	7
Per Pound.	$.50	.50	.50	.50	.40	.30	.30	.40	.25

*In 7-ounce tin at 30 cents and 1¾-ounce tin at 10 cents.

John Sunshine Spud Cement



Sets brass spuds instantly in porcelain handles, etc.

Easy to use, makes a clean job.

Packed 6 cubes in a box; 24 boxes in a carton.

Weight per carton, one pound.

Per Box..... ....

Exterior Bondlite Paste Paint

A white paint that maintains whiteness for long periods because it weathers by chalking, not by peeling, checking or cracking.

It flows on easily, reducing application cost. Self-sizing and high hiding.

Made of lead, zinc and titanium; penetrates into and bonds with either masonry or wood surfaces, damp or dry.

Average coverage per gallon, 300–600 square feet.

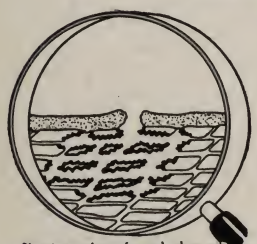
Size Container.....gallons	¼	1	5	30
No. 1, for Masonry.....per gallon*	$1.00	$3.50	$3.40	$3.35
No. 2, for Wood.....per gallon	*1.20	3.95	3.90	3.85

*Per container.

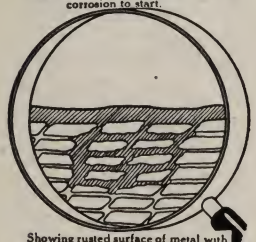
For tints in quantity lots, add 20 cents per gallon.

Totrust Rust Preventive Paint

For Metal Protection



Showing surface of metal where oil paint has cracked and allowed corrosion to start.



Showing rusted surface of metal with Totrust penetrating and sealing rusted particles from further corrosion.

For painting over solid rust to stop rust bleeding through. Totrust penetrates the pin holes and rusted pits of metal, expels moisture, seals under and around rusted particles to form a hard, continuous surface. Resistant to acid and alkaline fumes, alcohol and other chemical fumes, brine (salt water), ice and general weather conditions. Not harmed by heats up to 620° F. or by extreme cold. Exceptionally tough to abrasion or flexing.

Apply clear Totrust over one or two coats of calcimine or white wash to seal the surface, as undercoater for casein or oil paints.

Coverage, 800 to 1200 square feet per gallon depending on type of surface.

Only one coat Totrust is required for interior work; for exterior work two coats Totrust or Totrust as prime coat under oil paint or one coat Totrust with aluminum or red lead finish.

Not to be used for continuous **immersion in water.** In 1-quart and 1-gallon cans and 5-gallon and 55-gallon drums.

Size Container.....gal.	¼	1	5	55
Clear.....per gal.*	$1.50	$4.20	$4.00	$3.80
Black, Red, Olive Green..per gal.	*1.55	4.30	4.10	3.90
Machine Grey, Light Grey, White.....per gal.	*1.60	4.60	4.40	4.20

*Per can.

Alcatraz Plastic Roof Cement

A combination of asphalt and asbestos fiber which comes in a thick, elastic putty. For use on composition paper or felt roofs, all kinds of metal, gravel and slag, cement and gypsum, shingles, etc. Ideal for repairing gutters, troughs, downspouts, drain pipes, chimney flashings, cornices, etc. Applied with a trowel.

Colors available: Black, red or green.

Size Container....lbs.	3	5	10	50	*300	†550
Per Pound.....	....	....	....	....	....	....

*In ½ drum. †In drum. Drums must be returned.

Black Asphaltum Varnish

Black asphaltum varnish is used for painting boilers and risers.

Put up in ½-gallon and gallon cans, and 30-gallon barrels.

½-Gallon Can.....each	....	
Gallon Can.....each	....	
30-Gallon Barrel.....per gallon	....	

Bronzing Liquid

One quart of bronzing liquid is required for each pound of bronze powder, except aluminum, which requires about one gallon of liquid to one pound of powder.

Size Can.....gal.	½	1
Per Can.....	....	....

Radiator Bronze Powder

Size of Can.....pound	½	1
Gold Bronze.....per can	.....	.....
Copper Bronze.....per can	.....	.....
Aluminum Bronze.....per can	.....	.....

Other colors in 1-pound cans.

Radiator Primer

This primer acts as a filler and furnishes a smooth surface upon which to apply the finishing coat. Put up in quart, half gallon and gallon cans.

Price, Each		
Quart Can	½ Gal. Can	Gal. Can
.....	.....	.....

No. 3-30 Radiator Bronzing Brushes

Used for bronzing radiators, etc.

A mixture of fitch hair and bristle stock, vulcanized in rubber; nickel-plated ferrule; long thin natural wood handle.

Packed 12 in a box.

Width.....inches	1	1½	2	2½
No. 3–30.....per dozen	$4.67	6.00	8.00	12.00
Thickness.....inches	3/16	¼	¼	¼
Stock Out.....inches	1⅜	1½	1⅝	1¾
Weight per Dozen.....pounds	⅝	⅞	1⅛	2

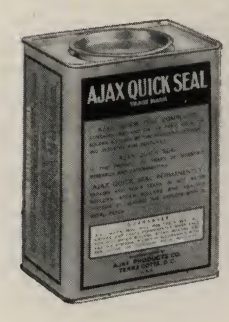
TSCO Pipe Dope Brushes

A convenient brush for applying pipe dope to pipe threads. Steel ferrule. Round natural finished handle.

Size No.....	2	4	6	8	10	12
Per Dozen.....	....	....	....	....	....	....
Stock Out.....inches	1⅞	1⅞	2⅛	2⅜	2⅝	2⅞
Width.....inches	½	¾	⅞	1 1/16	1⅛	1⅛
Weight per Dozen.lb.	½	1⅛	1½	2	2⅝	3

Ajax Quick Seal

Boiler Repair Compound



Repairs and stops leaks in hot water boilers, steam boilers and heating systems by sealing the defects with a metal seal.

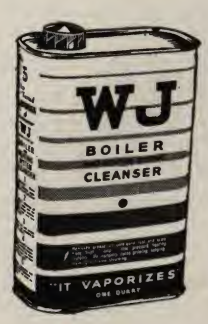
May be used for soil pipe stacks by filling stack with water. Pour compound in top of stack and place a cover over top for ½ hour.

Guarantee—Positively seals all cracks and leaks permanently when used for hot water boilers, steam boilers and heating systems, if used in accordance with directions, or purchase price will be refunded.

Put up in 1-pound cans.

Per Can..... **$2.50**

WJ Boiler and Heating System Cleanser



Removes grease, oil, core sand, rust, and scale from high and low pressure heating systems.

Cleans deposits of rust and scale in range boilers, storage tanks and water backs, copper coil gas heaters and piping.

Permanently cures priming, surging, foaming, and slow steaming.

Quart cans packed 12 to case; gallon bottles packed 4 to case.

Quart Cans.....each **$3.50**
Gallon Bottles.....each **12.00**

Vinco Heating System and Hot Water Supply System Cleanser

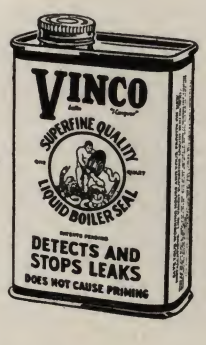
Vinco is a harmless insoluble powder that removes all oil, grease, rust, scale, and dirt from heating and hot water supply systems.

It thus stops priming, foaming, surging, and slow steaming in new boilers and eliminates fuel waste and low efficiency in old ones.

Booklets with full information sent upon request.

3 and 5 Pound Cans..... per pound **$1.25**

Vinco Liquid Boiler Leak Seal



This seal makes speedy and permanent repairs of all boiler and heating system leaks. Also used to tighten up new jobs.

Does not make a boiler prime or foam.

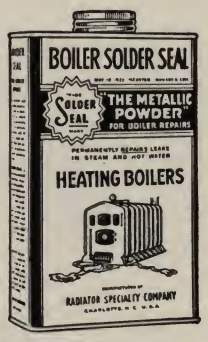
For steam and vapor systems, use 1 quart Vinco Liquid Boiler Seal to each 6 square feet of grate area.

For hot water systems, use 2 quarts Vinco Liquid Boiler Seal to each 6 square feet of grate area.

Put up in 1-quart cans only.

Per Can..... **$4.00**

Boiler Solder Seal



Boiler Solder Seal is a scientifically prepared powder which automatically finds and permanently repairs leaks in steam and hot water heating systems.

After Boiler Solder Seal has hardened in the leaks it has a tensile strength equal to that of the metal to which it is attached. It will withstand any steam pressure.

QUANTITIES.—Steam Boilers, one can for boilers with 8 sq. ft. of grate surface or less; one can for each additional 8 sq. ft. Hot water boilers require 50% more.

Furnished ready for instant use.

In 1¼-Pound Cans Only.....each **$5.00**

Boiler Neverleak

Repairs all ordinary leaks and cracks in hot water heating boilers; also steam boilers below water line; provided directions are followed and fire is kept up under boiler for not less than three hours after its use.

It is not necessary to know what sections or tubes are leaking, or to lose use of boiler. All that is necessary is a coal fire under boiler, water heated to at least 150 degrees and Neverleak added to the water.

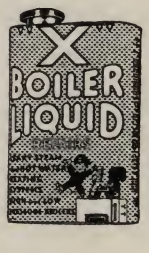
Liquid Form

Quart Can.....each **$3.00**
Half-Gallon Can.....each **5.00**
Gallon Can.....each **8.00**

Powder Form

1-Pound Can.....each **$3.00**

X Boiler Liquid



For repairing leaks in high and low pressure steam and hot water boilers. Contains no soap or meal.

When used on new installations, it takes up the small sand hole leaks.

Size Container	1 Qt.	½ Gal.
Each	$2.10	3.40
No. in a Carton	12	6

Soda Ash

Light 58 per cent is the standard for all general purposes, such as boiler compounds, washing preparations, and soap powders.

Furnished in any quantity.

Prices upon application.

No. 5 Airigators

For Reconditioning Automatic Radiator Air Valves

Endorsed by leading air valve manufacturers because its occasional use makes for better heating and promotes the sale of high-grade air valves.

Airigator is compressed like an oil can; fits all makes of air valves.

Airigate (Fortis) is forced and surged through all internal chambers and passages of the valve, scouring the entire inside leaving it perfectly clear and unobstructed.

One Airigator will clean more than 100 air valves.

No. 5.....each **$2.00**

Boyer's Zinc Soot Destroyer

This destroyer when thrown upon a hot fire causes all the soot in the pipes, flues and chimneys to vanish, leaving them as clean as new. Saves coal and work. Standard size package is about 8 ounces.

Price.....each **$.25**

San Solvent

Where a septic tank, drainage field, drain line, or cesspool has become clogged this chemical can be used to open drainage by dissolving solids and grease. Particularly effective for use in cesspools.

*No. **525**, 25-Pound Drum....each **$3.00**

No. **505**, 5-Pound Can; 6 In a Carton.....per dozen **10.00**

*One drum required for 250-gal. or 30 cu.ft. capacity.

Blue Seal Drain Pipe Solvent

A fumeless drain pipe solvent that is guaranteed to clear any drain pipe stoppage not caused by glass, metal or other solid substances.

Blue Seal Drain Pipe Solvent is also effective for thawing frozen drain pipes, stacks, flush tanks, traps, etc.

Put up in friction top cans.

Will not injure the finest plumbing.

1-Pound Cans	each	**$.40**
2-Pound Cans	each	**.75**
100-Pound Drums	each	**21.50**

Boyer's Closet Chemical Liquid

This Pine Cone brand, is the standard chemical for indoor closets of all types.

One cupful in 2 gallons of water makes an effective liquid and keeps the closet sanitary and free from disagreeable odors.

Size Can Gallon	Each	Size Can Gallon	Each
1/4	**$.60**	1	**$1.50**

Desolvo Sewer and Drain Pipe Cleaner

Desolvo, a triple-strength cleaner, is a combination of mineral elements so intermingled that upon its mixture with water a chemical reaction takes place, generating intense heat.

Cleans clogged pipes and has solved the problem of removing obstructions in drain, waste, and sewer pipes, or from washstands or closets, caused by the accumulation of grease, soap, rags, hair, and vegetable or other organic matter.

Contains no acids and will not injure the plumbing fixtures or connections.

Size Can....	12-Oz.	16-Oz.	2-Lb.
Each	**$.25**	**.35**	**.65**

No. P-2600 Glossgard

An economical adhesive in powder form. For applying paper for protection of enameled plumbing fixtures during installation. Glossgard does not injure enamel. It is easily applied and removed.

Furnished in 1½-pound bags.

Packed 12 bags to the case.

No. P-**2600**.....per bag ....

Plumbers' Putty

Best quality putty.

Furnished in 1-, 5-, and 25-pound cans.

Size Can....pounds	1	5	25
Per Can.....	....	....	....

Desolvo Toilet Bowl Cleaner

For cleaning toilet bowl and vitreous ware only.

This cleaner removes stains and disagreeable odors from toilet bowls and the hidden trap.

Prices upon application.

Plumbers' Candles

Per pound..... .....

20-Pound Boxes.....each .....

50-Pound Boxes.....each .....

Sani-Flush Closet Bowl Cleaner

Sprinkle a little Sani-Flush in the closet bowl and follow directions on can; stains and incrustations will disappear leaving the bowl clean, white and odorless.

Per Dozen..... .....

MATERIAL NOT LISTED

We can furnish practically everything used in mill, factory, or shop.

Please send us all of your inquiries.

Reed Malleable Iron Pipe Stocks

Solid Pattern—Fitted with Reed Q and E Dies

Stocks are standard. Dies vary in thickness according to size of pipe; this gives correct taper and length of threads. Dies have double-threaded throat.

Cutting edges are given rake so that metal is removed by a cutting action. Left hand dies take twice the list of right hand dies.

Nominal dimensions of dies: No. 00SP2, 1⅝x1⅝-inch; Nos. 10SP1 and 10SP2, 2x2-inch; Nos. 1SP1 to 1SP5, 2½x2½-inch; Nos. 1½SP1 to 1½SP5, 3x3-inch; Nos. 2SP1 to 2SP4, 4x4-inch.

Set No.	Complete Each	Extra R.H. Dies Each	Extra Guides Each	Threads Pipe Inches	Wt. Lb.
00SP2	$6.25	$1.40	$.30	¼, ⅜, ½	5¼
10SP1	6.50	1.40	.30	⅜, ½, ¾	6
10SP2	8.00	1.40	.30	¼, ⅜, ½, ¾	6½
1SP1	10.50	1.60	.40	¼, ⅜, ½, ¾, 1	11¼
1SP2	12.00	1.60	.40	⅛, ¼, ⅜, ½, ¾, 1	12
1SP3	10.50	1.60	.40	⅛, ¼, ⅜, ½, ¾	11¼
1SP4	7.50	1.60	.40	½, ¾, 1	9¾
1SP5	9.00	1.60	.40	⅜, ½, ¾, 1	10½
1SP6	6.00	1.60	.40	½, ¾	8¾
1½SP1	9.50	2.00	.60	¾, 1, 1¼	15
1½SP3	15.50	2.00	.60	¼, ⅜, ½, ¾, 1, 1¼	19¾
1½SP5	11.50	2.00	.60	½, ¾, 1, 1¼	16¾
2SP1	14.50	2.50	.75	1¼, 1½, 2	22
2SP2	17.00	2.50	.75	1, 1¼, 1½, 2	24¾
2SP3	19.50	2.50	.75	¾, 1, 1¼, 1½, 2	27¼
2SP4	22.00	2.50	.75	½, ¾, 1, 1¼, 1½, 2	30

Extra Stocks and Parts

Cat. No.	Comp. Each	Extra Stocks Wt. Lbs.	Die Clamp Screws Each	Wt. Oz.	Screw Guide Each	Wt. Oz.	Die Clamp Each	Wt. Oz.	Clamp Spring Each	Wt. Oz.
00 SP	$2.75	3	$.30	2	$.20	½	$.10	¾	$.10	¼
0 SP	3.00	3¼	.30	2	.20	½	.10	¾	.10	¼
1 SP	3.50	5½	.30	2	.30	1	.10	¾	.10	¼
1½SP	4.00	7¾	.50	4	.40	1	.15	1	.10	½
2 SP	8.50	11½	.50	4	.50	1¼	.15	1	.10	½

Reed Solid Square Q & E Dies for Bolts

Size Bolt In.	No. 00SL 1⅝x1⅝ In. Ea.	No. 0SL 2x2 In. Ea.	No. 1SL 2½x2½ In. Ea.	No. 1½SL 3x3 In. Ea.	No. 2SL 4x4 In. Ea.	U.S. Thread per In.
¼	$1.50	$1.50	$2.00	....	....	20
5/16	1.50	1.50	2.00	....	....	18
⅜	1.50	1.50	2.00	....	....	16
7/16	1.50	1.50	2.00	....	....	14
½	1.50	1.50	2.00	$2.50	....	13
9/16	1.50	1.50	2.00	2.50	....	12
⅝	1.50	1.50	2.00	2.50	....	11
¾	1.50	1.50	2.00	2.50	....	10
⅞	....	1.50	2.00	2.50	....	9
1	....	1.50	2.00	2.50	$3.50	8
1⅛	....	....	2.00	2.50	3.50	7
1¼	....	....	2.00	2.50	3.50	7
1½	....	....	....	2.50	3.50	6
1¾	....	....	....	....	3.50	5
2	....	....	....	....	3.50	4½
Bolt Guides	.30	.30	.40	.60	.75	

Left-hand dies take double the right-hand list.

Reed Bolt Die Heads and Dies

For Reed Removable Head Ratchet Stocks

For Series No.	70	71	72
Head, Complete with Bolt Die. each	$2.70	$2.85	$3.25
Extra Bolt Die ..... each	1.50	1.50	2.00
Cat. No. Die	00SL	0SL	1SL
Size Available N.C. Bolt ..... in.	¼–¾	¼–1	¼–1¼

Reed Removable Head Ratchet Stock and Q & E Dies

A set is composed of a ratchet ring with removable heads, each head being a complete unit consisting of die holder, die and guide.

The ratchet principle is the easiest method of applying hand power in pipe threading, as the operator is in a much more natural position when threading with the ratchet than is possible with the two handled stock.

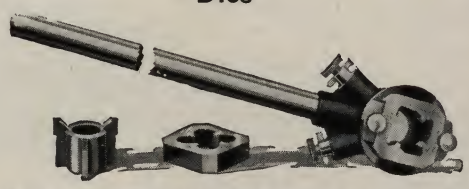
This die starts and cuts easily. Has the new double-threaded throat, a feature which causes the die to start onto the pipe with great ease, burr or no burr.

Left hand dies take twice the list of right hand dies.

These sets are furnished with hardened steel bushings which prevent the pipe from wearing the heads and which can be removed when crooked threads are wanted.

Cat. No.	Per Set	Each Complete Heads	Each Extra R. H. Dies	Threads Pipe Inches	Sizes Heads Made	Size Die Block Inches
70–1	$15.75	$2.25	$1.40	⅛ to ¾	⅛ to ¾	1⅝x1⅝
70–2	13.50	2.25	1.40	¼ to ¾	⅛ to ¾	1⅝x1⅝
70–3	11.25	2.25	1.40	⅜ to ¾	⅛ to ¾	1⅝x1⅝
71–1	18.90	2.40	1.40	⅛ to 1	⅛ to 1	2 x2
71–2	16.50	2.40	1.40	¼ to 1	⅛ to 1	2 x2
71–3	14.10	2.40	1.40	⅜ to 1	⅛ to 1	2 x2
71–4	11.70	2.40	1.40	½ to 1	⅛ to 1	2 x2
72–2	19.75	2.50	1.60	¼ to 1¼	⅛ to 1¼	2½x2½
72–3	17.25	2.50	1.60	⅜ to 1¼	⅛ to 1¼	2½x2½
72–4	14.75	2.50	1.60	½ to 1¼	⅛ to 1¼	2½x2½
72–5	12.25	2.50	1.60	¾ to 1¼	⅛ to 1¼	2½x2½

Reed Standard Ratchet Stocks and Q & E Dies



The set is composed of a ratchet stock, a die holder, and removable dies and guides. The ratchet principle is generally conceded to be the easiest method of applying power in threading pipe.

The easy starting, easy cutting, double-threaded throat dies make the lead screw customary for the 1 to 2-inch dies entirely unnecessary and has therefore been eliminated for the large sized stock. The tool is light, compact and thoroughly practical.

A metal carrier is furnished only with sets Nos. 801 to 824 and only with sets composed of 3 dies or more. Assortments other than those listed can be furnished at a corresponding change in list price.

No.	Per Set	Extra Ratchets Each	Extra R. H. Dies Each	Extra Guides Each	Threads Pipe Inches	Size Die Block Inches
80–1	$13.00	$4.50	$1.40	$.35	⅛ to ¾	1⅝x1⅝
81–2	13.50	4.50	1.40	.40	¼ to 1	2 x2
81–3	12.00	4.50	1.40	.40	⅜ to 1	2 x2
82–4	12.50	4.75	1.60	.50	½ to 1¼	2½x2½
83–4	16.00	4.75	2.00	.60	½ to 1½	3 x3
83–5	13.75	4.75	2.00	.60	¾ to 1½	3 x3
83–6	11.50	4.75	2.00	.60	1 to 1½	3 x3
84–4	20.75	5.00	2.50	.75	½ to 2	4 x4
84–5	18.00	5.00	2.50	.75	¾ to 2	4 x4
84–6	15.25	5.00	2.50	.75	1 to 2	4 x4
84–7	12.50	5.00	2.50	.75	1¼ to 2	4 x4

Left hand dies take twice the list of right hand dies.

Reed 3-Way Stock and Q & E Pipe Dies

The Reed 3-Way stock and die set is one of the most convenient and practical tools the plumber or steam-fitter can own. The stock acts as a permanent holder for the die. All the operator has to do when he goes out on a job is to pick up the stock, and he has with it all that is needed to thread any size of pipe within its range. The usual hunting around for dies and bushings, and the chance of losing them on the job, is entirely done away with.

Easy starting. Easy cutting. Stock equipped with die with the new double-threaded throat, a feature which, burr or no burr, causes the die to start the thread with great ease and without the customary pushing effort, and also a feature which has marked effect in reducing the power required to complete the thread.

Crooked thread if desired. Guide holes for Sets Nos. 614 and 625 are fitted with steel bushings which can be removed whenever the operator desires to cut a crooked thread. These stocks and dies are light, strong and compact.

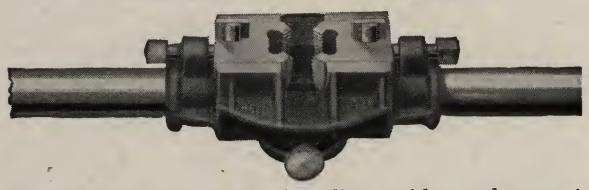
The double threaded throat dies in these sets thread brass and steel pipe equally well.

Left hand dies take twice the list of right hand dies.

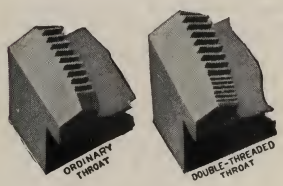
Set No.	Threads Pipe Inches	Size Die Block Inches	Per Set	Extra R.H. Dies Each	Extra Stocks Each
60-1	1/8, 1/4, 3/8	1 5/8x1 5/8	$10.00	$1.40	$6.10
60-2	1/4, 3/8, 1/2	1 5/8x1 5/8	10.00	1.40	6.10
60-3	3/8, 1/2, 3/4	1 5/8x1 5/8	10.00	1.40	6.10
61-3	3/8, 1/2, 3/4	2 x2	11.00	1.40	6.80
61-4	1/2, 3/4, 1	2 x2	11.00	1.40	6.80
62-4	1/2, 3/4, 1	2 1/2x2 1/2	11.65	1.60	8.20
62-5	3/4, 1, 1 1/4	2 1/2x2 1/2	11.65	1.60	8.20

Reed Improved Adjustable Pipe Stocks and Dies

Armstrong Pattern—With Ring Guides



Stock is standard and takes dies, guides and parts in corresponding sizes of all makes of this Armstrong type. Stock is made of highest grade of malleable iron.



Dies made of special high grade tool steel. Dies have double-threaded throat, which causes dies to start threading without any pushing effort, drawing them onto pipe easily, burr or no burr.

Dies vary in thickness according to size of pipe. Left hand dies take twice the list of right hand dies

	Set No.	Per Set	Extra R.H. Dies Each	Extra Guides Each	Threads Pipe Inches	Size Dies Inches	Wt. Lb.
1	AP1	$9.00	$1.60	$.30	1/8, 1/4, 3/8, 1/2	1/8 to 1/2	5 1/2
2	AP1	12.00	2.00	.40	1/4, 3/8, 1/2, 3/4, 1	1/8 to 1	12 1/4
2	AP2	14.00	2.00	.40	1/8, 1/4, 3/8, 1/2, 3/4, 1	1/8 to 1	13 3/4
2	AP4	10.50	2.00	.40	3/8, 1/2, 3/4, 1	1/8 to 1	11 1/4
2	AP5	8.75	2.00	.40	1/2, 3/4, 1	1/8 to 1	10 1/4
2	AP6	7.00	2.00	.40	1/2, 3/4	1/8 to 1	9 1/4
2 1/2	AP1	14.00	2.50	.60	1/2, 3/4, 1, 1 1/4	1/8 to 1 1/2	15 1/2
2 1/2	AP3	19.00	2.50	.60	1/4, 3/8, 1/2, 3/4, 1, 1 1/4	1/8 to 1 1/2	18 3/4
3	AP1	18.00	3.50	.75	1 1/4, 1 1/2, 2	1/2 to 2	24 1/2
3	AP2	21.00	3.50	.75	1, 1 1/4, 1 1/2, 2	1/2 to 2	27 1/2
3	AP3	24.00	3.50	.75	3/4, 1, 1 1/4, 1 1/2, 2	1/2 to 2	30 1/2
3	AP4	27.00	3.50	.75	1/2, 3/4, 1, 1 1/4, 1 1/2, 2	1/2 to 2	34

Reed Improved Adjustable Pipe Stock and Dies

With Adjustable Guides

The Reed Adjustable Guide eliminates the separate guides so often lost or misplaced. This guide, together with the use of the Reed Double-Threaded Throat Dies eliminate the necessity for filing off the burr before starting to thread. It centers the stock accurately insuring perfectly straight threads.

No.	Each	Threads Pipe, Inches	Weight Pounds
22AP1	$14.00	1/4, 3/8, 1/2, 3/4, 1	5 1/2
22AP2	16.00	1/8, 1/4, 3/8, 1/2, 3/4, 1	13 1/4
22AP3	14.00	1/8, 1/4, 3/8, 1/2, 3/4	12 1/4
22AP4	12.50	3/8, 1/2, 3/4, 1	11 1/4
22AP5	10.75	1/2, 3/4, 1	10 1/4
22AP6	9.00	1/2, 3/4	9 1/4
22 1/2AP1	16.50	1/2, 3/4, 1, 1 1/4	15 1/2
22 1/2AP2	19.00	3/8, 1/2, 3/4, 1, 1 1/4	16 3/4
22 1/2AP3	21.50	1/4, 3/8, 1/2, 3/4, 1, 1 1/4	18 3/4
22 1/2AP4	24.00	1/8, 1/4, 3/8, 1/2, 3/4, 1, 1 1/4	20
22 1/2AP5	19.00	1/2, 3/4, 1, 1 1/4, 1 1/2	16 1/4
23AP1	21.00	1 1/4, 1 1/2, 2	24 1/2
23AP2	24.00	1, 1 1/4, 1 1/2, 2	27 1/2
23AP3	27.00	3/4, 1, 1 1/4, 1 1/2, 2	30 1/2
23AP4	30.00	1/2, 3/4, 1, 1 1/4, 1 1/2, 2	34

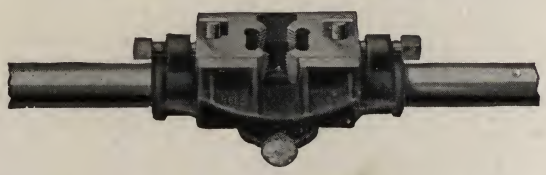
Extra Dies

No.	2AP	2 1/2AP	3AP
Range of Sizes, Incl.....inches	1/8 to 1	1/8 to 1 1/2	1/2 to 2
Right Hand Dies.....each	$2.00	2.50	3.50

Left hand dies take double the right hand list.

Reed Improved Adjustable Stocks and Dies

Armstrong Pattern—For Bolts



Stocks are standard and take Nos. 1, 2 and 3 dies of all other standard makes.

Sets consist of a stock complete with an assortment of dies and guides as listed, packed in a box.

Bolt dies are made in U.S. standard, National Fine Thread (S.A.E.—A.L.A.M.) and British standard threads. U.S. standard, right-hand supplied unless otherwise ordered.

Left hand dies take twice the list of right hand dies.

Set No.	Dies Contained in Set, Inches	Wt. Lbs.	Price per Set
1AL2	1/4, 5/16, 3/8, 7/16, 1/2	4 3/4	$11.50
1AL3	1/4, 3/8, 1/2, 5/8, 3/4	4 1/2	12.00
1AL4	1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4	5 1/4	15.00
2AL1	1/2, 5/8, 3/4, 7/8, 1	11 1/2	15.00
2AL2	1/4, 3/8, 1/2, 5/8, 3/4, 7/8, 1	13 1/2	20.00
2AL3	1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4	14	20.00
2AL4	1/2, 5/8, 3/4, 7/8, 1, 1 1/8, 1 1/4	13 1/2	20.00
2AL5	1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1	15 1/2	24.50
2AL6	1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1, 1 1/8, 1 1/4	17	30.00
3AL1	1, 1 1/4, 1 1/2, 1 3/4, 2	33	33.00
3AL2	1, 1 1/8, 1 1/4, 1 1/2, 1 3/4, 2	37	38.00

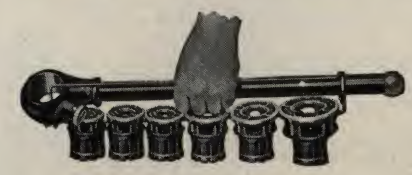
Extra R.H. Dies

For Set No...	1AL		2AL		3AL
Size....inches	1/4 to 7/16	1/2 to 3/4	1/4 to 1	1 1/8, 1 1/4	1 to 2
Price..per set	$1.50	1.75	2.00	2.25	5.00

Extra Guides and Stocks

For Set No.....	1AL	2AL	3AL
Price, Extra Guides.....each	$.30	$.40	$.75
Price, Extra Stocks.....each	3.25	4.00	7.00

Ridgid Ratchet Threaders



No. 00-R

For small pipe. Die heads push out easily for changing, snap into ratchet ring from either side, and can not fall out. Dies reverse for threading pipe close to wall. No special dies needed. Chaser dies easily removed for regrinding. Conduit dies available. Carrier with complete set.

No. 00-R Capacity, In.	Each	No. 0-R Capacity, In.	Each	No. 11-R Capacity, In.	Each
1/8 to 1	$16.50	1/8 to 1	$17.87	1/8 to 1 1/4	$21.94
1/8 to 3/4	14.00	1/8 to 3/4	15.32	1/8 to 1	19.21
1/4 to 1	14.10	1/4 to 1	15.47	1/4 to 1 1/4	19.42
1/4 to 3/4	11.60	1/4 to 3/4	12.92	1/4 to 1	16.69
3/8 to 1	11.70	3/8 to 1	13.07	3/8 to 1 1/4	16.90
3/8 to 3/4	9.20	3/8 to 3/4	10.52	3/8 to 1	14.17
1/2 to 1	9.30	1/2 to 1	10.67	1/2 to 1 1/4	14.38
1/2 to 3/4	6.80	1/2 to 3/4	8.12	1/2 to 1	11.65

1/8, 1/4 and 3/8-Inch Chasers.....per set $1.40
1/2 and 3/4-Inch Chasers.....per set 1.50
1-Inch Chasers.....per set 1.70
1 1/4-Inch Chasers, For No. 11-R Only.....per set 1.70

Ridgid 3-Way Die Pipe Stocks

For conduit and small pipe. Packed 1 to a box.

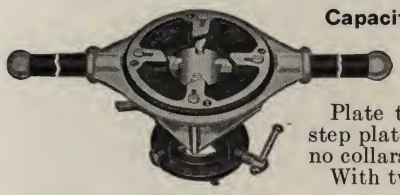
No.....	30A	31A
Each.....	$7.50	8.00
Capacity.....inches	3/8–3/4	1/2–1
Weight.....pounds	7 1/8	11

Four Segment Chaser Dies

Size.....inches	3/8	1/2	3/4	1
For No. 30A.....per set	$1.40	$1.50	$1.50	....
For No. 31A.....per set	.....	1.50	1.50	$1.70

No. 1DR Ridgid Poster Threaders

Capacity, 1 to 2-Inch Pipe



Full floating posts. Alloy construction.

Plate type workholder has step plate; cam type requires no collars or bushings.

With two handles.

No.	Each	Description	Wt. Lb.
1DR–P	$13.00	With Plate Type Workholder.....	20 1/4
1DR–C	15.00	With Cam Type Workholder.....	20 1/2

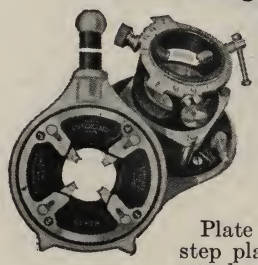
Chaser Dies

Size Inches	Description	Per Set of 4
1, 1 1/4, 1 1/2	Alloy Steel.....	$.85
1, 1 1/4, 1 1/2	High Speed Steel.....	1.50
2	High Speed Steel.....	1.35

Pipe Cutting & Threading

We are prepared to cut and thread pipe to measurement or sketch.

No. 1R Ridgid Poster Threaders



Threads 1 to 2-inch pipe with four sets of chaser dies. Full-floating posts, separately replaceable.

Alloy construction throughout. Closed chaser slots prevent spreading of die head. All dies of same number interchangeable with similar number of any Ridgid poster set.

Plate type workholder constructed of step plate, easily moved to desired size, two knurled screws then adjusted to top. Cam type workholder requires no collars or bushings.

No. 1R-P, Plate Type Workholder.....each $12.00
No. 1R-C, Cam Type Workholder.....each 14.00
1, 1 1/4, 1 1/2-Inch Alloy Steel Chaser Dies.....set of 4 .85
1, 1 1/4, 1 1/2-In. High Speed Steel Chaser Dies..set of 4 1.50
2-Inch High Speed Steel Chaser Dies.....set of 4 1.35

No. 65 Ridgid Pipe Threaders

Capacity 1 to 2-Inch Pipe
Plain 2-Handle Die—Non Ratchet

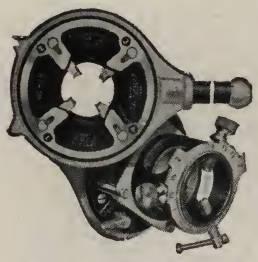
Thread four sizes of pipe, 1 to 2 inches, with one set of high-speed tool-steel chaser dies that stay in the threader. Thread both pipe and conduit.

Steel and malleable construction, with drop-forged hardened tool-steel cam plates. No bushings. Workholders take 2 inch couplings for threading 2 inch close nipples.

No. 65P, with Plate Type Workholder.....each $14.00
No. 65C, with Cam Type Workholder.....each 14.75
Extra Chaser Dies, High Speed Steel.....per set 2.75

Ridgid Pipe Threaders

Capacity, 1 to 2-Inch Pipe



Threads four sizes of pipe, 1 to 2 inches with one set of dies that stay in the threader. Furnished with either cam or plate type workholder, practically automatic; set to pipe size, tighten one screw; no bushings. Workholder takes 2-inch couplings for threading 2-inch close nipples.

Rugged all steel and malleable alloy construction, with drop-forged hardened tool steel cam plates.

No. 65R-C, Ratchet with Cam Type Workholder, Weight, 23 Pounds.....each. $17.00
No. 65R-P, Ratchet with Plate Type Workholder, Weight 22 1/2 Pounds.....each 15.00
Extra Chaser Dies, 4 in a Set, Wt., 8 Oz.....per set 2.75

Toledo 3-Way Pipe Threading Devices

Capacity 3/8 to 1-Inch Pipe

A light, small tool, easy to operate. Each die head is on center thereby insuring a perfectly balanced tool. Dies are removable and can be reground when dull or replaced at a small expense.

No.....	30	31
Complete.....each	$6.00	$6.75
3/8-Inch Dies, Set of 4 Segments, Wt. 1 Lb....	1.30	....
1/2, 3/4-Inch Dies, Set of 4 Segments, Wt. 1 Lb.	1.30	1.30
1-Inch Dies, Set of 4 Segments, Wt. 1 Lb.....	....	1.63
Shipping Weight, Complete.....pounds	5 1/4	8 1/4

Toledo Adjustable Bolt Die Stocks

Dies are simultaneously moved in or out for deep, shallow, or standard threads, by turning the knurled sizing ring.

Each die segment takes a proportional share of the work which makes easier cutting, smoother threads, and longer die life. Dies can be easily reground.

Die change is easily made from one size to another.

No. 101

Capacity, 1/4 to 5/8-Inch N.C. (U.S.S.) or N.F. (S.A.E.)
Also 3/8, 7/16 and 1/2-Inch Pump Rod Dies

Measures 17 inches including handles. Wt. 2 3/4 lb.

No.	Description	Wt. Lb.	Each
101	Complete with 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, and 5/8-In. R. H. Dies and Box, (Spec. N. C. or N. F.)	5	$12.10
101	Stock with 1 Set R. H. Dies and Guide	2 3/4	3.20
...	Stock Only	2 1/2	1.80
...	R. H. Dies	1/8	*1.30
...	Guides	1/16	.10
...	Red Enameled Metal Box. 7 1/4x4 3/4x1 3/4 In.	1 1/4	.50

No. 102

Capacity, 1/2 to 1-Inch N.C. (U.S.S.) or N.F. (S.A.E.)

Measures 25 1/2 inches including handles. Weight, 5 1/4 pounds.

102	Complete with 1/2, 9/16, 5/8, 3/4, 7/8, and 1-In. R. H. Dies and Box, (Specify N. C. or N. F.)	10	$13.35
102	Stock with 1 Set R. H. Dies and Guide	5 1/4	4.00
...	Stock Only	5	2.45
...	R. H. Dies	1/4	*1.40
...	Guides	1/8	.15
...	Red Enameled Metal Box, 11 1/4x5 3/4x1 7/8 In.	3	1.60

*Per set.

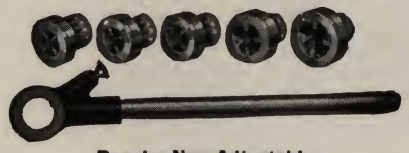
No. 101-FM Toledo Full Mounted Adjustable Bolt Die Stock Sets

Consists of seven separate full-mounted die stocks, each with a separate set of bolt dies—1/4, 5/16, 3/8, 7/16, 1/2, 9/16, and 5/8-inch—either N.C. or N.F. Each die segment cuts equally at any setting. Dies easily reground. Packed in a strong, partitioned red-metal box.

No. **101-FM**.....per set **$25.00**

No. 00 Toledo Ratchet Threaders

Capacity 1/8 to 3/4-Inch Pipe



Regular Non-Adjustable

Adjustable

Regular complete tool consists of handle, 1/8, 1/4, 3/8, 1/2 and 3/4-inch regular die heads with right hand dies.

Adjustable pipe die heads give quick adjustment of 4 to 5 turns over or undersize, as well as standard.

Ratchet handle or 2-handle stock can be furnished; also special 3/8, 1/2 or 3/4-inch left-hand dies.

		Ship. Wt. Lb.
No. 00 Regular, Complete, 1/8 to 3/4 Inch...each	**$12.35**	9 1/2
Ratchet Only or Two-Handle Stock.....each	**1.95**	2 1/4
1/8, 1/4 or 3/8-In. Reg. Die Head and R.H. Dies.ea.	**1.95**	1 1/4
1/2 or 3/4-In. Regular Die Head and R.H. Dies.ea.	**2.28**	1 1/4
1/8, 1/4 or 3/8-In. Adj. Die Head and R.H. Dies.ea.	**3.35**	2 1/2
1/2 or 3/4-Inch Adj. Die Head and R.H. Dies...ea.	**3.50**	2 1/2
Regular Dies.....per set of 4 segments	**1.30**	1
1/8, 1/4 or 3/8-Inch Adjustable Dies.....per set	**1.60**	1
1/2 or 3/4-Inch Adjustable Dies.....per set	**1.75**	1
Steel Case for Handle and 7 Die Heads....each	**1.25**	6
Steel Case for Handle and 16 Die Heads...each	**2.95**	10

Toledo Adjustable Bolt Die Heads

Capacity 1/4 to 1-Inch Bolts or Rod

U.S.S. or S.A.E. Thread—3/8, 7/16 or 1/2-Inch Pump Rod

Toledo Adjustable Bolt Die Heads are designed for use in the regular No. 00 Ratchet Handle or Two-Handle Stock.

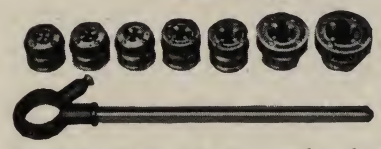
Standard bolt threads, or an over or undersize adjustment of 1/64 inch are obtained by loosening 4 die head cover screws and turning knurled ring until the desired size is reached.

Segmental dies are easily reground.

		Ship. Wt. Lb.
Heads with Right Hand U.S.S. or S.A.E. Bolt Dies:		
1/4, 5/16, 3/8, 7/16, 1/2 or 9/16-Inch.....each	**$3.35**	2
5/8, 3/4, 7/8 or 1-Inch.....each	**3.50**	2
Right Hand Bolt Dies, U.S.S. or S.A.E. Thread:		
1/4, 5/16, 3/8, 7/16, 1/2 or 9/16-Inch.....each	**1.60**	1
5/8, 3/4, 7/8 or 1-Inch.....each	**1.75**	1
3/8, 7/16 or 1/2-In. Head with Pump Rod Dies.ea.	**3.75**	...
Ratchet Handle or Two-Handle Stock.....each	**1.95**	2 1/4
Small Steel Carrying Case for Ratchet or Two-Handle Stock and 7 Heads.....each	**1.25**	6
Large Steel Carrying Case for Ratchet, Two-Handle Stock and 16 Heads.....each	**2.95**	10

No. 11 Toledo Ratchet Pipe Threading Devices

Capacity 1/8 to 1 1/4-Inch Pipe



Complete tool consists of ratchet, r.h. die heads with dies in a carton.

Die heads instantly changed by pulling ratchet pawl knob.

Die segments can be removed and reground.

No.	Description	Wt. Lb.	Each
11	Complete, 1/8 to 1 1/4-Inch Size	18	**$19.50**
..	Ratchet Only	3 1/4	**2.00**
..	1/8, 1/4, 3/8, 1/2, 3/4, 1, 1 1/4-Inch. Die Head with R. H. Dies	1 3/4	**2.50**
..	1/8, 1/4, 3/8, 1/2, or 3/4-Inch Dies Only	1	***1.30**
..	1 or 1 1/4-Inch Dies Only	1	***1.63**
..	Steel Carrying Case	8	**2.00**

Any combination may be ordered. *Per set.

No. 12 Toledo Ratchet Pipe Threading Devices

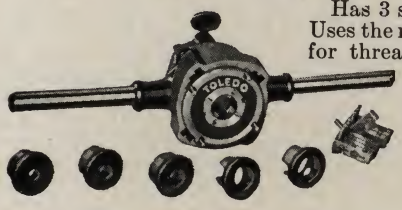
Capacity, ⅛ to 2-Inch Pipe

Die heads changed by pulling ratchet pawl knob. Special dies for electric conduit, brass or copper pipe. Complete tool has ratchet handle, ½, ¾, 1, 1¼, 1½ and 2-inch die heads with dies. If complete tool is not desired, any combination of heads may be ordered.

		Wt. Lb.
No. 12, Complete, ½ to 2-Inch.....each	$21.00	26
Ratchet Only.....each	3.00	6
⅛, ¼, ⅜, ½ or ¾-In. Die Head with R. H. Dies. each	2.60	3
1 or 1¼-Inch Die Head with R. H. Dies...each	3.00	3
1½ or 2-Inch Die Head with R. H. Dies...each	3.40	4
⅛, ¼, ⅜, ½ or ¾-Inch Dies.....per set	1.30	1
1 or 1¼-Inch Dies.....per set	1.63	1
1½ or 2-Inch Dies.....per set	2.15	1

No. 0 Toledo Adjustable Pipe Threading Devices

Capacity, ⅛ to ¾-Inch Pipe



Has 3 sets of dies to stock. Uses the receding-die principle for threading ½ and ¾-inch pipe, making it an easy operating tool.

Length from tip to tip of handles, 24 inches.

	Each	Ship. Wt. Lb.
No. 0, R.H., Complete, ⅛ to ¾-Inch Size...	$10.40	9½
No. 0, R.H., Complete, ¼ to ¾-Inch Size...	8.82	9
Dies, R.H., Single Set, ⅛ to ¾-In...per size	1.38	1

Left hand dies are also available, prices upon request.

Toledo Adjustable Pipe Threading Devices

Capacity, 1 to 2-Inch Pipe

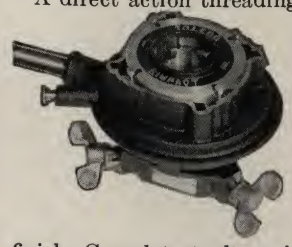
Consists of the tool body, two handles, and complete set of 1 to 2-inch right-hand dies and bushings. Also furnished for cutting left hand threads.

No.	Description	Ship. Wt. Lb.	Each
1	R.H., Plain, Complete, 1 to 2-Inch.....	20	$9.00
1	L.H., Plain, Complete, 1 to 2-Inch.....	20	12.00
1A	R.H., Ratchet, Complete, 1 to 2-Inch.....	23	11.25
1A	L.H., Ratchet, Complete, 1 to 2-Inch.....	23	15.00
1 to 2-Inch R-H. Dies, Complete Set.....each			3.50
1, 1¼, 1½-Inch R-H. Dies, Single Set.....each			.75
2-Inch R-H. Dies, Single Set.....each			1.25
1, 1¼, or 1½-Inch Dies, L.H. or Wrought Iron Pipe R.H., Single Set.....each			1.00
2-In. Dies, L.H. or Wrt. Iron Pipe R.H., Sgl. Set.each			1.50
1, 1¼, 1½, or 2-Inch R-H. Brass Pipe Dies.....each			1.00

Toledo Simpact Adjustable Ratchet Pipe Threading Devices

Self Contained—Capacity 1 to 2-Inch Pipe

A direct action threading device in which the dies bear against tapered steps.



Pockets in head collect the oil and continually drip it on the dies when cutting.

Dies made of finest grade high speed steel and can be reground. The three-jaw pipe holder is designed for easy handling and accurate centering. Tubular handle.

Tool body has black crackle finish. Complete tool consists of the tool body, one set of 1 to 2-inch high speed steel dies and the 24-inch handle.

Each, Shipping Weight, 24 Pounds.....	$15.00
Dies, R. H. Complete Set, 1 to 2-Inch.....per set	2.25

Toledo Adjustable Pipe Threading Devices

Capacity 1 to 2-Inch Pipe Inclusive

For brass, copper, iron, or steel pipe. Adjustable rear guide; no bushings required. Separate set of dies for each size pipe; 2-inch dies are high speed steel. Pipe holder will take 2-inch coupling to permit cutting short nipples. Set includes complete set 1 to 2-inch right-hand dies.

		Ship. Wt. Lb.
No. 1BR, Right-Hand Ratchet, Complete..each	15.00	23
Complete Set of Right-Hand Dies.....each	3.50	2
1, 1¼, or 1½-Inch Right-Hand Dies.....per set	.75	1
2-Inch Right-Hand Dies.....per set	1.25	1
1, 1¼, or 1½-Inch Dies for W.I. Pipe....per set	1.00	1
2-Inch Dies for W.I. Pipe.....per set	1.50	1
1, 1¼, 1½, or 2-Inch Brass Pipe Dies....per set	1.00	1

No. 1½R Toledo Adjustable Ratchet Threading Devices

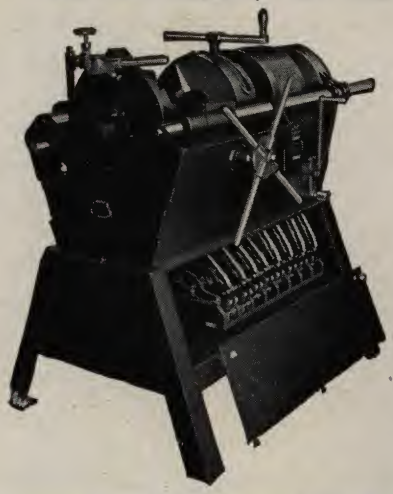
Capacity 2½ to 3-Inch Pipe
Capacity 2 to 3-Inch Tubing

When ordering, be sure to state whether the standard pipe thread tool or the special oil well tubing tool is desired.

	Standard	Special
No. 1½R, Complete.....each	$27.00	$30.00
Dies per Set of 4 Segments, Wt. 1 Pound	2.40	2.40
No. Threads to the Inch.....	8	11½
Nos. of Sets of Dies to Stock.....	2	3
Shipping Weight, Complete.....pounds	46	46

Toledo High Speed Power Pipe Machines

2-Inch—Capacity ½ to 2-Inch Pipe Inclusive
No. 1-2-4—Capacity 1 to 4-Inch Pipe Inclusive



Has six spindle speeds obtained instantly through one clutch lever and gear shift lever. Easily controlled with one hand. All gears and friction clutch run in oil. Friction gear protects the machine from overload. Has extra large chip pan and oil reservoir.

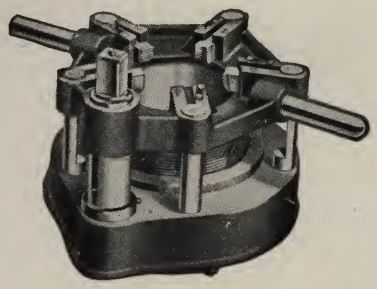
Machines are furnished complete with separate die head and high speed steel dies for each size of pipe within their capacities, cutter knives, reamer, wrenches, adjustable pipe support, and cutting oil.

Description	Each	Ship. Wt. Lb.
*½ to 2-Inch, Complete with A-C., 60-Cycle, 3-Phase, 220–440-Volt Motor.....	$750.00	1150
†No. 1-2-4, 1 to 4-Inch, Complete with A-C., 60-Cycle, 3-Phase, 220–440-Volt Motor...	1400.00	2500

*Also furnished with ⅛, ¼, and ⅜-inch pipe thread dies; ⅜ to 1½-inch bolt dies; and ½ to 2-inch left-hand pipe dies if ordered.

†Also furnished with ½ and ¾-inch pipe thread dies, and ⅜ to 2-inch bolt dies if ordered.

Toledo Geared Adjustable Pipe Threading Devices



Easy operating large threader. Operated either by ratchet handle or instantly converted into power machine with a Toledo power drive.

Furnished with complete set of dies, bushings, set-screw wrench, and ratchet handle.

No. 2—Capacity 2½ to 4-Inch Pipe Inclusive

Weight, 95 pounds.

No. 2, Right-Hand Threads.....each **$50.00**
Dies, Each Size.....per set **4.00**

No. 2BR—Capacity 2½ to 4-Inch Pipe Inclusive

For brass or copper, as well as iron or steel pipe.

Fitted with three broad-faced chuck jaws and micrometer line guide bars. No bushings are required.

Weight, 95 pounds.

No. 2BR, Right-Hand Threads.....each **$55.00**
Dies, Each Size.....per set **4.00**

No. 25BR—Capacity 2½ to 6-Inch Pipe Inclusive

For brass or copper, as well as iron or steel pipe.

Fitted with four broad-faced chuck jaws and micrometer line guide bars. No bushings are required.

Easy positive die change. Extra set of dies furnished.

Weight, 181 pounds.

No. 25 BR, Right-Hand Threads.....each **$115.00**
Dies, Each Size.....per set **4.00**

No. 2½—Capacity 4½ to 6-Inch Pipe Inclusive

Special 4-inch dies and 4-inch bushing can be furnished.

Weight, 187 pounds.

No. 2½, Right-Hand Threads.....each **$100.00**
Dies, Each Size.....per set **6.00**
Special 4-Inch Dies.....per set **10.00**

No. 3—Capacity 4½ to 8-Inch Pipe Inclusive

Special 4-inch dies and 4-inch bushing can be furnished.

Weight, 215 pounds.

No. 3, Right-Hand Threads.....each **$150.00**
Dies, Each Size.....per set **6.00**
Special 4-Inch Dies.....per set **10.00**

No. 4—Capacity 9 to 12-Inch Pipe Inclusive

Special 8-inch dies and 8-inch bushing can be furnished.

Weight, 373 pounds.

No. 4, Right-Hand Threads.....each **$250.00**
Dies, Each Size.....per set **10.00**
Special 8-Inch Dies.....per set **10.00**

Toledo Universal Drive Shafts

Especially designed to operate geared threading and cutting tools with power pipe machines. One end of the shaft is held in the chuck of the pipe machine and the socket is slipped over the driving pinion of the threading or cutting tool.

Shaft is extra long, measuring 20 inches, which permits inserting through spindle of No. 999 Toledo Machine and operating tools from rear of machine.

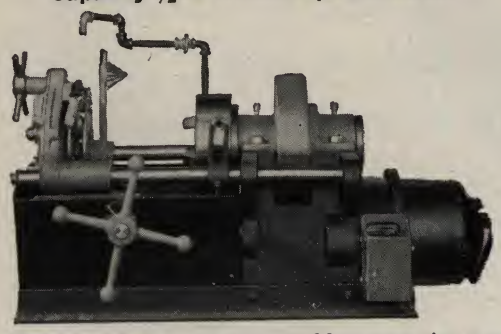
Socket is fitted with set screw and adjustable for large or small driving pinions of the pipe tools.

Overall length, 64½ inches. Shipping weight, 42 pounds.

Each..... **$20.00**

No. 999 Toledo Power Pipe Machines

Capacity ½ to 2-Inch Pipe Inclusive



An efficient, small, compact, portable power pipe machine. The ½-hp. ball-bearing universal motor operates from any 110-volt lamp socket. Sturdy drum-type switch. Other motors on request.

Can be furnished as listed below, complete with ½ to 2-inch right-hand dies, bushings, complete set of four cutter blades, chuck wrench, cutter blade wrench, 10 feet of cable with connectors and 1 gallon of thread cutting oil.

Cutting and Threading Speeds.—2-inch pipe is cut off in 10 seconds; 2-inch pipe is threaded in 22 seconds with the Super Model, and in 30 seconds with the Standard Model.

Either machine can be furnished with ⅛, ¼ or ⅜-inch sizes if desired.

Super Model

With Quick-Opening Die Heads and Dies

Description	Each	Ship. Wt. Lb.
No. 999, Complete with 6 Q-O. Die Heads and ½ to 2-Inch R-H. Pipe Dies (6 Sets).....	$350.00	473
No. 999, Complete with 3 Q-O. Die Heads and ½ to 2-Inch R-H. Pipe Dies (6 Sets).....	309.95	432
⅛ to ¾-Inch Q-O. Die Head Only, No Dies...	13.35	6
1 or 1¼-Inch Q-O. Die Head Only, No Dies...	13.35	6
1½ or 2-Inch Q-O. Die Head Only, No Dies...	13.35	6
One Set ⅛, ¼, ⅜, ½, or ¾-Inch R-H. Pipe Dies.....per set	3.25	1
One Set 1, 1¼, 1½, or 2-Inch R-H. Pipe Dies .....per set	4.00	1
Bushings, ⅛, ¼, ⅜, ½, ¾, 1, 1¼, and 1½ In.	.35	1½
*Cutter Blades.....	1.00	⅛
Cutter Blades.....per set of 4	4.00	1

Standard Model

With Non-Opening Die Heads and Dies

No. 999, Complete with 6 Non-Opening Die Heads and ½ to 2-Inch R-H. Pipe Dies (6 Sets).....	$275.00	434
No. 999, Complete with 9 Non-Opening Die Heads and ⅛ to 2-Inch R-H. Pipe Dies (9 Sets).....	287.45	440
One Complete Set ½ to 2-Inch Die Heads and Covers Only, Less Dies.....	13.30	17
½-Inch Die Head and Cover Only, Less Dies.	2.00	2
¾-Inch Die Head and Cover Only, Less Dies.	2.00	2
1-Inch Die Head and Cover Only, Less Dies..	2.20	3
1¼-Inch Die Head and Cover Only, Less Dies	2.20	3
1½-Inch Die Head and Cover Only, Less Dies	2.40	4
2-Inch Die Head and Cover Only, Less Dies..	2.50	4
⅛-Inch Die Head and Cover Only, Less Dies.	2.50	2
¼-Inch Die Head and Cover Only, Less Dies.	2.50	2
⅜-Inch Die Head and Cover Only, Less Dies.	2.50	2
One Complete Set ½ to 2-Inch R-H. Pipe Dies Only.....	14.30	2
One Set ⅛, ¼, ⅜, ½, or ¾-Inch R-H. Carbon Steel Pipe Dies Only.....per set	1.30	2
One Set 1 or 1¼-Inch R-H. High Speed Steel Pipe Dies Only.....per set	2.60	4
One Set 1½ or 2-Inch R-H, High Speed Steel Pipe Dies Only.....per set	3.25	4

*When ordering single cutter blades, always specify whether (A) outside skew or (B) inside skew is required.

Dies for bolt, electric conduit, and left-hand pipe threads can also be supplied.

Parts for Toledo Power Pipe Machines

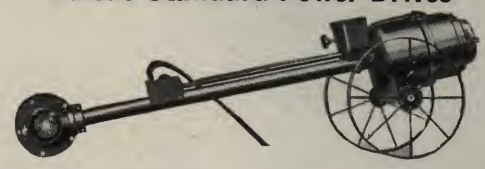
For 2-Inch High Speed Machines

Description	Each	Approx. Ship. Wt. Lb.
Cutter Blade	$2.00	¼
Cutter Blades ... per set of 4	8.00	½
⅛ to ¾-Inch Quick-Opening Die Head Only	13.35	6
1 or 1¼-Inch Quick-Opening Die Head Only	13.35	6
1½ or 2-Inch Quick-Opening Die Head Only	13.35	6
⅛, ¼, or ⅜-Inch Right-Hand Carbon Steel Pipe Dies ... each size	3.25	½
½, ¾, 1, 1¼, 1½, or 2-Inch Right-Hand High Speed Steel Pipe Dies ... per set, each size	4.00	½
⅜ to 1⅛-Inch N.C. or N.F. Right-Hand Bolt Dies for ½ to ¾-Inch Quick-Opening Head ... per set, each size	4.00	½
1¼-Inch N.C. or N.F. Right-Hand Bolt Dies for 1 to 1¼-Inch Q-O. Head. per set, each size	6.00	½
1⅜ or 1½-Inch N.C. Right-Hand Bolt Dies for 1 to 1¼-Inch Q-O. Head ... per set, each size	6.00	½
½, ¾, 1, 1¼, 1½, or 2-Inch Conduit Dies ... per set, each size	4.00	½
½, ¾, 1, 1¼, 1½, or 2-Inch Left-Hand Dies ... per set, each size	6.00	½
Measuring Device	50.00	40
No. 2 Nipple Chuck, ½ to 2 Inches	20.00	32
Pipe Support	7.50	30

For No. 1-2-4 Machines

Cutter Blade (Specify Bevel or Straight Edge)	$3.00	¼
Cutter Blades ... per set of 4	12.00	1
1 or 1¼-Inch Quick-Opening Die Head Only	27.50	25
1½ or 2-Inch Quick-Opening Die Head Only	30.00	28
2½ or 3-Inch Quick-Opening Die Head Only	32.50	30
3½ or 4-Inch Quick-Opening Die Head Only	35.00	30
1 or 1¼-Inch R-H. Pipe Dies. per set, each size	6.00	1
1½ or 2-Inch R-H. Pipe Dies. per set, each size	8.00	1½
2½, 3, 3½, or 4-Inch Right-Hand Pipe Dies ... per set, each size	10.00	2
No. 4 Nipple Chuck, 1 to 4 Inches	60.00	72
Adjustable Pipe Support	12.50	62
Adapter Plate to Hold Any No. 999 or 2-Inch High Speed Small Quick-Opening Die Head	12.00	10½
Small Quick-Opening Die Head to Fit Adapter Plate	13.35	6
Special Chuck Jaw Plates to Hold ⅜ to ⅞-Inch Rod	10.00	3
⅜ to 1⅛-Inch N.C. or N.F. Right-Hand Bolt Dies for Small ½ to ¾-Inch Quick-Opening Head ... per set, each size	4.00	½
1¼-Inch N.C. or N.F. Right-Hand Bolt Dies for Small 1 to 1¼-In. Q-O. Hd. ... per set, each size	6.00	½
1⅜ or 1½-Inch N.C. Right-Hand Bolt Dies for Small 1 to 1¼-In. Q-O. Hd. per set, each size	6.00	½
1¼ to 1½-Inch N.C. Bolt Dies for No. 1-2-4, 1 to 1¼-In. Q-O. Head ... per set, each size	10.00	½
1¾ or 2-Inch N.C. Bolt Dies for No. 1-2-4, 1½ to 2-In. Q-O. Head ... per set, each size	12.00	½
½ or ¾-Inch Right-Hand Dies for Small Quick-Opening Head ... per set, each size	4.00	½
1 or 1¼-Inch Conduit Dies. per set, each size	9.00	1
1½ or 2-Inch Conduit Dies. per set, each size	12.00	1½
2½, 3, 3½, or 4-Inch Conduit Dies ... per set, each size	15.00	2

Toledo Standard Power Drives



Designed to electrically operate Toledo hand threading and cutting devices for 2½ to 12-inch pipe. Also used to turn sheet metal rolls, operate hoisting winches to pull electric cable through conduit, and on many other machines requiring hand cranking methods of operation.

Drive consists of a specially designed electric motor mounted in a housing which also encloses a transmission gearing, communicating with a driving shaft extending to the operating end of the shaft housing. Mechanism is mounted on iron wheels. Diameter of wheels, 18 inches.

The motors used in the regular model drive can be supplied for a.c. 1½ hp. They are much more powerful than the household type of motor, and should not be connected to a lamp socket of the ordinary household system. Twenty feet of flexible cable are supplied with each drive.

The driving head is furnished with two driving bushings to fit the two sizes of pinions used on the various Toledo tools. At slow speed, pinion rotates at 38 rpm.; high speed, 57 rpm. Can be furnished with a.c. single-phase motor, 115–230 volts; or a.c. 3-phase motor, 220–440 volts. Other motors quoted on request. Always specify voltage.

Length over all, 6 feet. Net weights, 230 to 273 pounds.

Description	Each	Ship. Wt. Lb.
With 60 or 50-Cycle Motor	$250.00	325
With 25-Cycle Motor	300.00	350

Special Attachments for No. 1 Tool

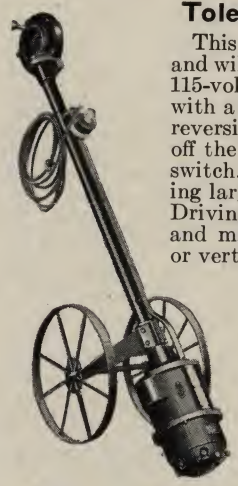
To thread 1 to 2-inch pipe with a Toledo Power Drive, this attachment, which consists of a special yoke and pair of short handles, must be used. Shipping weight, 6 pounds.
Each ... $2.50

Toledo Super Power Drives

Similar in appearance to the Toledo Standard Drive, but slightly larger. The driving head rotates at 57 rpm. low speed and 97 rpm. high speed. Furnished with 2½-hp., 3-phase a.c. motor, 220 or 440 volts. Controlled by a specially designed switch conveniently located on the drive shaft casing. Flexible cable is 20 feet long.

Net weight, 278 pounds; shipping weight, 396 pounds.
Each ... $325.00

Toledo Universal Power Drives



This drive has a ½-hp. universal motor, and will operate from a light socket on any 115-volt current. It may also be furnished with a 230-volt universal motor. Motor is reversible so that operator may back dies off the completed thread by a turn of the switch. May be used for opening or closing large, manually operated sluice gates. Driving head is slipped on the valve stem and may be turned for either horizontal or vertical stem valves.

Motor automatically adjusts speed to load, increasing power and decreasing speed on heavy loads and increasing speed on light loads. When under load, driving bushing rotates about 30 rpm. Furnished with 20-foot rubber covered cable.

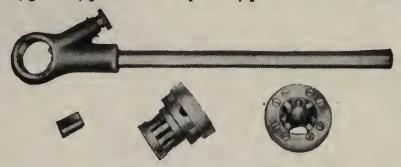
Description	Each	Ship. Wt. Lb.
Universal Power Drive for 115 V. A.C. or D.C.	$200.00	242
Universal Power Drive for 230 V. A.C. or D.C.	200.00	242
Rubber Tired Wheels ... per pair	10.00	30

Special Adjustable Safety Devices

Fits in driving head and can be adjusted for 8 different loads. It will slip when any overload is applied, and is desirable when drive is used to operate sluice gates or gate valves. Shipping weight, 26 pounds.
Each ... $50.00

No. 2 Beaver Open Ratchet Die Stocks

For 1/8 to 3/4-Inch Pipe—1/4 to 1-Inch Bolts



Openings between dies for easy oiling and chip clearance. Square dies, no weak offset to break. Die segments interchangeable, easily resharpened, reversible for threading pipe too short to pass through die head. Right or left hand.

No. 2 Complete, for Pipe Only

Size.....inches	1/2–3/4	3/8–3/4	1/4–3/4	1/8–3/4
Each.....	$6.80	9.20	11.60	14.00
Shipping Weight..pounds	6 1/4	7 1/4	8 1/4	9 1/4

Pipe Die Heads with Dies

Size.....inches	1/8	1/4	3/8	1/2	3/4
Each.....	$2.40	2.40	2.40	2.40	2.40
Shipping Weight....pounds	1 1/4	1 1/4	1 1/4	1 1/4	1 1/2

3/4-Inch 20-Thread Brass Die Head with Dies, Shipping Weight, 1 1/2 Pounds.....each $2.40
5/8 or 3/4-Inch 27-Thread Die Head with Dies, Shipping Weight, 1 1/2 Pounds.....each 2.40

Extra Pipe Dies

Extra Dies, Any Size, Right or Left Hand....per set 1.60

Ratchets Only

No. 2 Ratchet with Handle, Ship. Wt., 3 1/4 Lb..each 2.00

Bolt Die Heads with Dies

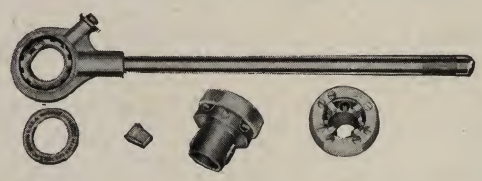
Bolt Die Heads with Dies, any Size, Right Hand, 1/4 to 1 Inch (by 16ths), Ship. Wt., 2 Lb.....each 3.40

Straight Thread Conduit Dies

Straight Thread Conduit Dies, 1/2 or 3/4 Inch, Shipping Weight, 1 1/2 Pounds.....per set 1.60

No. 3 Beaver Enclosed Ratchet Die Stocks

For 1/8 to 1-Inch Pipe—1/4 to 1-Inch Bolts



Ratchet mechanism fully enclosed, no teeth on die head to become mutilated. Oil holes in die heads for easy oiling and chip clearance. Dies square in shape, no weak sections to break. Dies can be reversed for threading pipe end too short to pass through die head. Right or left hand.

No. 3 Complete, for Pipe Only

Size.....inches	1/2–3/4	1/2–1	1/4–3/4	3/8–1	1/4–1	1/8–1
Each.....	$8.00	10.50	13.00	13.00	15.50	18.00
Ship. Wt.pound	8	10	9	10	11	12

Pipe Die Heads with Dies

Size.....inches	1/8	1/4	3/8	1/2	3/4	1
Each.....	$2.50	2.50	2.50	2.50	2.50	2.50
Ship. Wt.....pounds	1 1/4	1 1/4	1 1/4	1 1/4	1 1/2	1 3/4

3/4-Inch 20-Thread Brass Die Head with Dies, Shipping Weight, 1 1/2 Pounds.....each $2.50
5/8 or 3/4-Inch 27-Thread Die Head with Dies, Shipping Weight, 1 1/2 Pounds.....each 2.50

Extra Pipe Dies

Extra Dies, Any Size, Right or Left Hand....per set 1.60

Ratchets Only

No. 3 Ratchet with Handle, Ship. Wt., 4 Lb....each 3.00

Bolt Die Heads with Dies

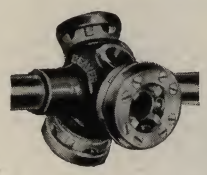
Bolt Die Heads with Dies, Any Size, Right Hand, 1/4 to 1 Inch (by 16ths), Ship. Wt., 2 lb.....each 3.50

Straight Thread Conduit Dies

Straight Thread Conduit Dies, 1/2 or 3/4 Inch, Shipping Weight, 1 1/2 Pounds.....per set 1.60

Beaver 3-Way Pipe Die Stocks

No. 33, 3/8, 1/2 and 3/4 Inch
Nos. 34 and 34E, 1/2, 3/4 and 1 Inch



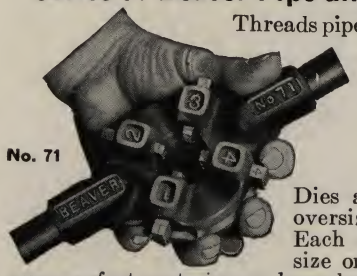
A durable and convenient tool. Will thread steel, iron or brass pipe.

For threading pipe too short to reach through stock, the die segments can be reversed.

Four large oil holes insure dies receiving ample oil.

No. 33, Complete, Ship. Wt., 10 1/2 Lb.....each $7.50
No. 34, Complete, Ship. Wt., 14 Lb.....each 8.00
No. 34E, with Straight Thread Dies for Electric Conduit, Ship. Wt., 14 Lb.....each 8.00
Dies Only, Ship. Wt., 1/4 Lb.....per set 1.60

Series 71 Beaver Pipe and Bolt Threaders



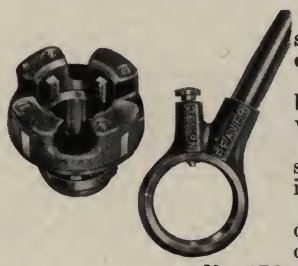
No. 71

Threads pipe 1/8 to 3/4 inch and bolts 1/4 to 1 inch (by 16ths), right or left hand. For hand use or with power units. Dies are well above tool body; chips clear instantly. No tools required to change dies. Dies adjust as single unit for oversize or undersize threads. Each set of dies threads one size only. Universal chuck insures perfect centering; no loose bushings.

No. 71 Plain, without Dies.....each $4.50
No. 71-R Ratchet, without Dies.....each 6.50
Right-Hand Dies, Any Kind or Size.....per set 1.50
Left-Hand Dies, Any Kind or Size.....per set 2.50
Metal Box Partitioned for 8 Sets of Dies.....each 1.00
Metal Kit-Box, for Threader and 10 Sets of Dies.each 2.50

No. 17C Beaver Ratchet Pipe Die Stocks

Capacity, 1/4 to 2 Inches



A rugged, foolproof tool for steel, iron, cast iron, brass, or copper pipe.

Has four large oil holes, bridged across the top to prevent spreading of die slots.

Die segments are square in shape; removable for regrinding.

Extra long handle and special die grinding, assist in easy operation.

No. 17C, Complete

Size.....inches	1 1/4–2	1/2–1 1/4	1/2–2	1/4–2	1/8–2
Each.....	$12.75	13.50	21.00	26.50	29.25
Shipping Weight .....pounds	28	27 1/2	41	49 1/2	53 1/2

Ratchets Only

With Handle; Shipping Weight, 6 1/4 Pounds....each $2.50

Die Heads with Dies

Size.inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Each.....	$2.75	2.75	2.75	2.75	2.75	2.75	2.75	3.75	3.75
Ship. Wt.lb.	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	5 1/4	5 3/4	6 1/2	7 1/2

Extra Dies

Any Size; Shipping Weight, 1/2 Pound.....per set $2.25

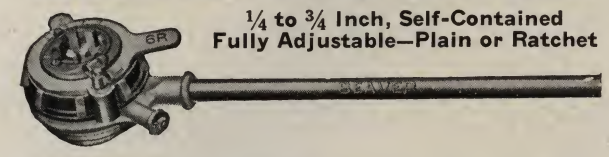
BUY FROM YOUR JOBBER

As your jobber we are carrying your stock of maintenance supplies. We keep down your investment.

You need our service. We need your orders.

Beaverette Easy Working Pipe Die Stocks

¼ to ¾ Inch, Self-Contained Fully Adjustable—Plain or Ratchet



A one-piece 4-way threader.

The two sets of dies required for this range, one set threading ¼ and ⅜ inch, the other ½ and ¾ inch, are always in the stock and are set to size by a single cam, or may be set to cut over or under standard size. A 3-jaw universal pipe guide eliminates loose bushings (⅛-inch dies extra). Improved locking device, now on top, more accessible.

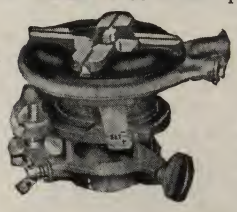
No. **6**, Plain, Complete, Ship. Wt., 12 Lb.....each **$12.00**
No. **6**R, Ratchet, Complete, Ship. Wt., 13 Lb..each **15.00**
Extra Dies Only, ⅛, ¼x⅜, or ½x¾ Inches, Right or Left, As Ordered, Ship. Wt., ½ Lb.....per set **2.25**

Beaver Cam-Type Fully-Adjustable Pipe Threaders

Ratchet—1-Handle

Threads 1 to 2 Inch—1 Set of Dies

This medium-weight cam-type tool, using one set of dies to thread 1 to 2-inch pipe, inclusive, is fully-adjustable to cut as much over or under size as desired. Available with a choice of two different centering devices.



Straight-line pull; ratchet drive ring on die head in same plane as dies; easier cutting and less wear. Dies on top for easy oiling and chip clearance. Twin recession posts insure smooth die recession and proper thread taper.

Cuts uniform threads, close nipples, including 2-inch. Air-furnace malleable iron. Vanadium alloy steel dies. Standard pipe handle. Painted black enamel with orange trim. Packed in individual fibreboard boxes.

Description	No.	Each	Ship. Wt. Lb.
With Universal Chuck.....	10-R	**$13.50**	24
With Universal Chuck.....	13-R	**15.00**	26¾

Extra Dies, Size, 1, 1¼, 1½ or 2-Inch Standard, Shipping Weight, ½ Pound.....per set **$1.50**
Brass or Cast Iron Pipe Dies, Shipping Weight, ½ Pound.....per set **2.00**
Extra Grip Screws, Ship. Weight, ⅛ Pound....each **.10**

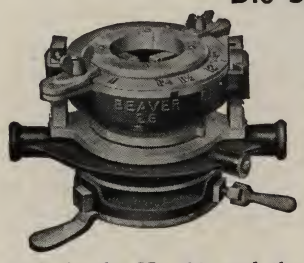
Beaver 4-Post Die Stocks

No. 38-RS, for Standard Pipe, 2½ and 3-Inch, 8-Thread
No. 38-RO, for Oil Well Tubing, 2, 2½ and 3-Inch, 11½-Thread
No. 38-API, for API Tubing, 2, 2½ and 3-Inch, 11½-Thread
No. 38-EU, for Ext. Upset Tubing, 2, 2½ and 3-Inch, 10-Thread

Direct drive on die head; grooved bolt-and-washer centering device, no bushings. Drip threads or close nipples. Semi-adjustable; American thread only; right hand. Standard mark indicated by shoulder on taper post.

No. **38**-RS, 8-Thread, 2½ and 3-In., Wt., 53 Lb....ea. **$27.00**
No. **38**-RO, 11½-Thrd., 2, 2½ and 3-In., Wt., 54 Lb..ea. **30.00**
No. **38**-API, 11½-Thrd., 2, 2½ and 3-In., Wt., 52 Lb.ea. **30.00**
No. **38**-EU, 10-Thrd., 2, 2½ and 3-In., Wt., 52 Lb...ea. **30.00**
Extra Dies, Weight, 1 Pound.....per set **2.40**

Beaver Heavy-Duty Self-Contained Die Stocks



1 to 2 Inches
Fully Adjustable

These die stocks are self-contained (no loose parts); thread 1", 1¼", 1½" and 2" pipe; adjustable for standard, over-size or under-size threads; will cut drip thread or close nipples.

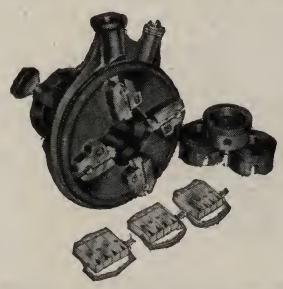
A number of important improvements have been made in the No. 26, and the new models pull much more easily due to improved die grinding.

Right or Left.

No. **26** Ratchet, Complete. Ship. Wt. 34 lb..... **$19.25**
No. **25** Plain, Complete. Ship. Wt. 28 lb..... **16.50**
Extra Dies, Thread Four Sizes. Ship. Wt. ¾ lb.per set **2.34**

Beaver Taper-Post Semi-Adjustable Threaders

Threads Pipe 1 to 2 Inches—4 Sets of Dies



Straight-line pull; ratchet drive ring on die head in same plane as dies; easier cutting and less wear. Spring-plunger die-retaining mechanism enclosed and protected against dirt.

The dies are hobbed. Replace one segment, or match odd segments into sets. Dies, bushings and grip screws are standard and interchangeable in other similar tools.

Standard mark is a shoulder on taper-post. Air-furnace malleable iron. Vanadium steel dies and standard pipe handle.

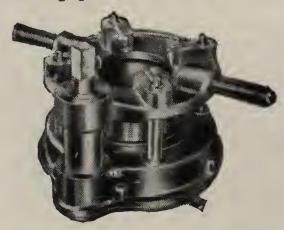
No. **9**, Plain; with Universal Chuck; Shipping Weight, 22 Pounds.....each **$12.00**
No. **7**-R, Ratchet—1 Handle; with Bushings; Shipping Weight, 18½ Pounds.....each **13.50**
No. **9**-R, Ratchet—1 Handle; with Universal Chuck; Shipping Weight, 22¾ Pounds.....each **15.00**
Extra Dies, Any Size, 1, 1¼, 1½, or 2-Inch, Shipping Weight, ½ Pound.....per set **.75**
Brass Pipe Dies, Shipping Weight, ½ Pound..per set **1.00**
Cast Iron Pipe Dies, Ship. Wt., ½ Pound....per set **1.25**
Extra Bushings for No. 7 Series, Ship. Wt., ¾ Lb..each **.25**
Extra Grip Screws, Ship. Weight, 3/16 Pound....each **.10**

No. 48-R Beaver Pipe Threaders

Semi-Adjustable Taper Post Type

Capacity, 2½, 3, 3½ and 4-Inch Pipe

Uses a separate set of dies for each size. Has an extra wide die with a wide throat to center and hold the tool on the pipe. Will cut right-hand tapered threads only, American Briggs Standard.



Fully enclosed gears. Driving pinion is straddle-mounted, with a bearing above and below the gear teeth on the pinion. Dies held in position by an enclosed spring-backed ball.

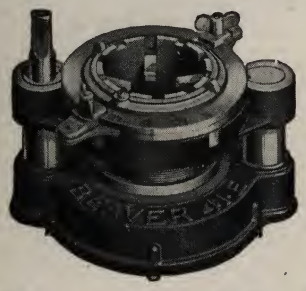
Semi-adjustable for cutting oversize or undersize.

Weight, 91 pounds.

No. **48**-R, Complete with Ratchet.....each **$55.00**
Extra Dies, Right-Hand Only.....each **4.00**

Beaver Geared Fully-Adjustable Die Stocks

2½ to 12 Inches



Gears in Nos. 41-E, 61-E, 61-EX and 80-E fully enclosed (packed with graphite grease). Gears in No. 90 are protected but not fully enclosed. Gear case of steel iron.

Lower end of pinion rides in bronze bushing. Semi-self-contained. No. 41-E uses 1 set of dies; Nos. 61-E, 80-E and 90, 2 sets each.

No.	41-E	61-E	61-EX	80-E	90
Complete.....each	$55.00	$115.00	$100.00	$150.00	$250.00
Extra Dies..per set	6.00	13.34	13.34	13.34	20.00
Size.....in.	2½–4	2½–6	4–6	4½–8	9–12
Ship. Wt.....lb.	110	196	174	208	285

No. 46 Beaver Heavy Duty Power Drives

Electric Driven—Reversible Switch

Universal Motor—110 or 220 Volts—A.C. or D.C.

Will cut and thread ⅛ to 12-inch pipe. Small hand tools for use on ½ to 2-inch sizes; geared tools and drive shaft for 2½ and 12-inch sizes. Makes up fittings. Useful as a winch for pulling cable; raising or lowering fixtures, etc.

Motor, 25 to 60 cycle; nominal hp. ½, can develop 2.3 hp. Approximate speed, 30 rpm.

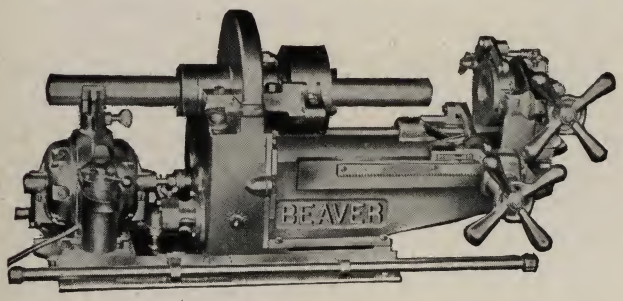
No. **46**, Shipping Weight 300 Pounds.....each **$160.00**
Portable Stand, 17-Inch Whls., Ship. Wt. 65 Lb...ea. **17.50**
Drive Shaft, Shipping Weight, 37 Pounds.....ea. **20.00**

Model A Beaver Pipe and Bolt Machines

Heavy Duty—Portable

Capacity: ⅛ to 2-Inch Pipe; ¼ to 2-Inch Bolts

2½ to 12-Inch Pipe with Shaft and Geared Tools



Conforms to standard machine tool design. Built with the chuck to the left and the controls to the right of the operator like a lathe—for right-hand operation. All operating controls are on the front of the machine at the operator's finger tips.

Has free working space of 12 inches between chuck jaws and die-head (when fully extended).

An all-steel 3-jaw universal chuck is used; capacity, ⅛ to 2 inches. Has automatic chuck wrench ejector.

Quick-opening dieheads are of the solid ring type. All four die segments move as a unit, insuring uniform adjustment and an even distribution of cutting on all four segments. Die segments are interchangeable.

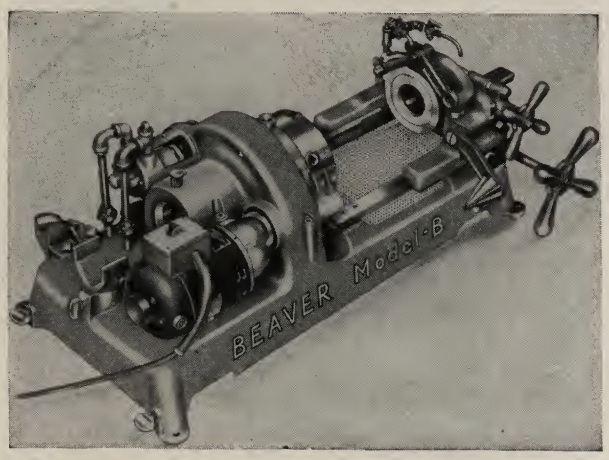
Furnished complete with 110 or 220-volt universal reversible motor for light line service, a.c. or d.c., 25 to 60 cycles; reversing controller-type switch; reversible oil pump; ⅛ to 2-inch hinged cone-type reamer; ball bearing self-centering wheel and roller cutoff, suitable for pipe or bolts; and 1 gallon of threading oil.

Model B Beaver Pipe and Bolt Machines

Portable

Capacity: ⅛ to 2-Inch Pipe; ¼ to 1½-Inch Bolts

2½ to 8-Inch Pipe with Shaft and Geared Tools



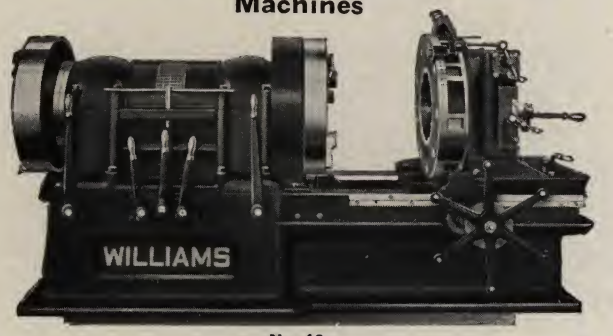
A compact unit for field use by plumbing, heating, electrical and sprinkler contractors. For right-hand operation. Has 13 inches open working space.

Fully enclosed gears run in oil, to reduce friction, heat, noise and wear. Has full-range universal chuck, with automatic safety chuck wrench ejector.

Quick-opening fully adjustable ring type dieheads—no lower hinge to get fouled with chips from dies.

Furnished complete with 110 or 220-volt universal reversible motor for light line service, a.c. or d.c., 25 to 60 cycles; reversing switch; reversible oil pump; ⅛ to 2-inch hinged cone-type reamer; ball bearing self-centering wheel and roller cutoff suitable for pipe or bolts; and 1 gallon of threading oil.

Williams Rapiduction Pipe Threading Machines



No. 12

Designed especially for high production service.

Patented die-head handles all sizes of pipe within the range of the machine.

High-speed tool steel dies are used.

Three levers control speed changes.

Fitted with rear chuck and reversing mechanism for tightening up or backing off flanges or fittings.

Dual control lever is placed at both front and rear chucks convenient to operator.

Can be furnished, arranged for either single pulley belt drive, or silent chain motor drive.

No.	6-A	8	12
Pipe Cap.....inches	1½–6	2½–8	3½–12
Extra Cap. (Pipe)....inches	.....	1½ & 2	2½ & 3
Bolt Cap.....inches	1–4	.....	.....
Spindle Speeds.....	6	6	8
Head Traverse.....inches	28	28	30
No. of Dies (per Set).....	5	7	9
Size Motor (1200 RPM.).hp.	5	7½	10
Floor Space.....feet	4⅙x7⅚	4⅙x7⅚	4 7/12x10¼
Net Wt.....pounds	6850	7000	12500
Ship. Wt., Crated...pounds	7350	7500	13300

Beaver Pipe and Bolt Machines

Heavy Duty—Portable

Description	Model A No.	Model A Each	Model A Ship. Wt. Lb.	Model B No.	Model B Each	Model B Ship. Wt. Lb.
3 Adjustable Duo-Type Dieheads, 3 Sets High Speed Steel Duo-Type Dies to Thread ½ to 2-Inch Pipe....	A-1	$375.00	500	B-1	$295.00	335
4 Duo-Type Dieheads with Dies, ¼ to 2-Inch Pipe.....	A-2	395.00	510	B-2	315.00	345
5 Duo-Type Dieheads with Dies, ⅛ to 2-Inch Pipe.....	A-3	415.00	520	B-3	335.00	355
6 Adjustable Mono-Type Dieheads, 6 Sets High Speed Steel Mono-Type Dies, Threads ½ to 2-Inch Pipe.....	A-11	400.00	530	B-11	340.00	365
7 Mono-Type Dieheads with Dies, ⅜ to 2-Inch Pipe.....	A-12	415.00	540	B-12	355.00	375
8 Mono-Type Dieheads with Dies, ¼ to 2-Inch Pipe.....	A-13	430.00	550	B-13	370.00	385
9 Mono-Type Dieheads with Dies, ⅛ to 2-Inch Pipe.....	A-14	445.00	560	B-14	385.00	395
2 Adjustable Mono-Type Dieheads, 6 Sets of High Speed Steel Mono-Type Dies, Threads, ½ to 2-Inch Pipe.....	A-21	350.00	505	B-21	280.00	340
2 Mono-Type Dieheads, 7 Sets of Dies, ⅜ to 2-Inch Pipe.....	A-22	355.00	507	B-22	285.00	342
2 Mono-Type Dieheads, 8 Sets of Dies, ¼ to 2-Inch Pipe.....	A-23	360.00	509	B-23	290.00	344
2 Mono-Type Dieheads, 9 Sets of Dies, ⅛ to 2-Inch Pipe.....	A-24	365.00	511	B-24	295.00	346

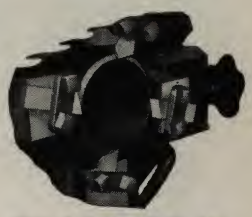
Model A, Complete, less all Threading Equipment; Shipping Weight, 470 Pounds.....each **$315.00**
Anchor Frame; Shipping Weight, 12 Pounds...each **5.00**
Model B, Complete, Less All Threading Equipment; Shipping Weight, 305 Pounds.....each **235.00**

Dieheads, Dies and Accessories

Description	Each	Ship. Wt., Lb.
Small Dieheads, for ⅛ to 1-Inch Bolt Dies.....	$15.00	10
Large Dieheads, for 1⅛ to 2-In. Bolt Dies.....	15.00	10
¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝, 11/16, ¾, 13/16, ⅞, 15/16, 1, 1⅛, 1¼, 1⅜, 1½, 1⅝, 1¾, 1⅞ or 2-In. R. H. Bolt Dies, USS (NC) or SAE (NF).....	*5.00	1½
L. H. Bolt Dies, Any Size or Kind.....	*7.50	1½
Small Dieheads, ⅛ to 1" Mono-Type Pipe Dies	15.00	10
Large Dieheads, 1⅛ to 2" Mono-Type Pipe Dies	15.00	10
Duo-Type Dieheads, for 2x1½, 1¼x1, ¾x½, or ⅜x¼-Inch Pipe Dies.....	15.00	10
⅛, ¼, ⅜, ½, ¾, 1, 1¼, 1½, or 2-Inch Mono-Type R.H. Pipe Dies.....	*5.00	1½
2x1½, 1¼x1, ¾x½, or ⅜x¼-Inch Duo-Type R. H. Pipe Dies.....	*5.00	1½
L.H. Pipe Dies, Any Size or Kind.....	*7.50	1½
Portable Stand, 217-Inch Steel Rimmed Wheels	22.50	153
Portable Stand, 217-Inch Rubber Tired Wheels	27.50	151
Drive Shaft for Operating Geared Tools.....	20.00	38
Adjustable Pipe Support.....	6.50	39
Nipple Chuck with Adapters, ½ to 2-Inch Pipe	20.00	25
Nipple Chuck with Adapters, ⅛ to 2-Inch Pipe	24.50	28
110–220 Transformers, Enables 110-Volt Motor to Be Used on 220-Volt and Vice-Versa.....	22.50	24
Beaver Threading Oil, 5-Gallon Pail.....	5.50	41

*Per Set.

Toledo Ratchet Geared Pipe Cutters



With Special 45° Blades

This tool cuts off large pipe quickly and accurately, and leaves a straight, square-end cut without burr.

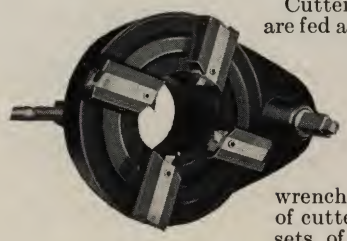
The chuck jaws are case hardened with micrometer marks; no bushings are necessary. When cutting off pipe while cutter frame is rotating, either by means of the ratchet handle or a Toledo Power Drive, the knives are fed into the pipe by hand; the operator gives the hand feed wheel a part turn at each revolution. The knives are made of high speed steel, carefully tempered and double-ended.

Special cutter blades for cutting a 45° bevel with a narrow shoulder on the end of the pipe can be furnished on special order.

A complete tool consists of the tool body, cutter knives, and set screw wrench all packed in a wood box; and the ratchet handle which is shipped separately.

No.	Description	Each	Ship Wt.Lb.
250	Geared Pipe Cutter Comp., 2½ to 6-In. Pipe	**$80.00**	122
300	Geared Pipe Cutter Comp., 4½ to 8-In. Pipe	**105.00**	164
350	Geared Pipe Cutter Comp., 7 to 10-In. Pipe	**130.00**	173
400	Geared Pipe Cutter Comp., 9 to 12-In. Pipe	**150.00**	207
...	Cutter Blades.....set of 4	**3.20**	1
...	Special Bevelled Cutter Blades....set of 4	**10.00**	1
...	Adapters.....set of 2	**10.00**	1
...	Long Cutter Clamp Screws.....set of 4	**.80**	1
...	Special Victaulic Grooving Blades..set of 4	**15.00**	1

Toledo Automatic Pipe Cutters



Cutters cut smoothly. Knives are fed automatically. Hand wheel sets knives for cutting, or quick return after pipe is cut off. Operated with ratchet handle or Toledo Power Drive. Outfit consists of tool body, set screw wrench, bushings, and extra set of cutter knives; No. 80 has two sets of cutter blocks. *Per set.

No. 40—Capacity, 2 to 4-Inch Pipe

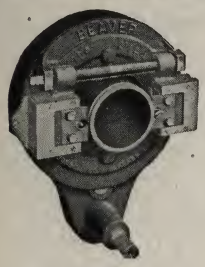
Description	Each	Ship. Wt., Lb.
Complete Cutter.....	$60.00	86
4 Cutter Blades.....	*2.40	1
4 Special 45° Beveled Cutter Blades	*5.00	...
4 Special Victaulic Grooving Blades.....	*4.00	..
Ratchet Handle Complete.....	3.50	11

No. 80—Capacity, 4½ to 8-Inch Pipe

Description	Each	Ship. Wt., Lb.
Complete Cutter.....	$150.00	189
4 Cutter Blades.....	*3.00	1
4 Special 45° Beveled Cutter Blades	*15.00	..
4 Special Victaulic Grooving Blades.....	*4.00	..
Ratchet Handle Complete.....	4.50	13

Good Will and Customers

Sincerely we hope to make each transaction with you a further bond of good will between us.



No. 104

Beaver Square-End Pipe Cutters

Self-contained. Gears encased and packed in grease. Unbreakable knives feed automatically. Universal two-jaw chuck centers and clamps it on the pipe; no bushings. A one-piece tool.

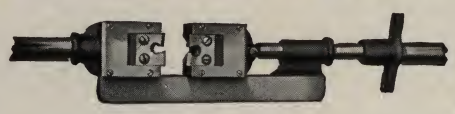
No. 104 Cutter with No. 41-E Die Stock makes an excellent 2½ to 4-inch combination for hand or power drive.

*No. 10 ratchet for hand use only.

No.	*10	104	106	108	112
Size.....in.	2½–4	2½–4	2½–6	4½–8	9–12
Complete.....each	$60.00	$75.00	$120.00	$150.00	$200.00
Extra Knives,					
Cutting.....set	2.00	2.00	4.00	5.00	6.00
Beveling Knives.set	3.00	3.00	6.00	7.50	9.00
Grooving Knives.set	3.00	3.00	6.00	7.50	9.00
Ship. Wt. Com..lb.	55	94	176	181	230

Beaver Square-End Pipe Cutters

No. 1, ⅛ to 1 Inch **No. 5, ½ to 2 Inch**



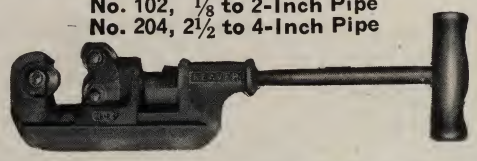
For cutting, grooving or beveling pipe.

This pipe cutter cuts like a lathe tool, each turn removing a thin shaving until the pipe is severed. Leaves no burr to be reamed or filed, or to reduce the capacity of the pipe, and threading dies start easily and with less wear.

No.	1	5
Complete.....each	$13.50	$15.00
Extra Cutting Knives.....per set	.80	1.00
Grooving or Beveling Knives.....per set	.....	2.00
Shipping Weight.....pounds	8½	14

Beaver Square-Built Pipe Cutters

No. 102, ⅛ to 2-Inch Pipe
No. 204, 2½ to 4-Inch Pipe



Made of malleable iron, with square frames surface ground. Wheels are at exact right angles. No. 102 may be used either as a one or three-wheel cutter; No. 204 is a three-wheel cutter.

No.	102	204
Each.....	*$4.40	14.40
Extra Wheels, Standard.....each	.36	.60
Extra Rollers.....each	.20	.....
Extra Pins.....each	.10	.10
Shipping Weight.....pounds	7¼	16

*With 1 wheel, 2 rollers; for 3 wheels, add 40 cents.

Reed Razor Blade Roller Pipe Cutters

Fast cutting special alloy wheels of extreme thinness. Special steel alloy body and block insure strength and long life. For 3-wheel cutter, replace roller with block wheels.

Cutter No.....	1R	2R	3R
Cuts Pipe.....inches	⅛–1¼	⅛–2	⅜–3
Each.....	$4.50	$6.00	$10.00
Block with Rollers.....each	1.50	2.10	3.30
Handle and Screw.....each	1.50	1.90	3.60
Wheel for Hook.....each	.50	.60	.80
Wheels for Block.....each	.66	.66	1.00
Rolls.....each	.40	.40	.55
Pins.....per doz.	1.56	1.56	1.56

Reed Improved Pipe Cutters

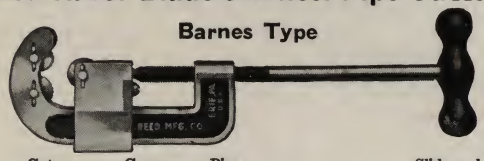
Saunders Type

For use only where the cutter can be revolved entirely around the pipe. Has one wheel and 2 rollers.

No.....	1S	2S	3S	4S	5S
Complete.....each	$3.00	$4.50	$7.50	$15.00	$22.50
Rollers.....each	.36	.48	.75	.75	.75
Pins.....per doz.	1.80	1.80	2.40	2.40	2.40
Wheels.....each	.50	.60	1.10	1.10	1.10
Blocks and Wheels...each	1.90	2.60	4.10	5.25	6.00
Cuts Pipe.....in.	⅛ to 1	1 to 2	2 to 3	2½ to 4	4 to 6

Reed Razor Blade 3-Wheel Pipe Cutters

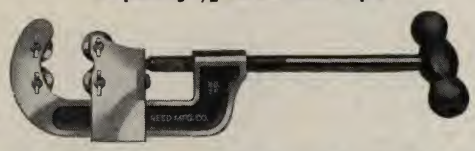
Barnes Type



No.	Cuts Pipe Inches	Complete Each	Pins per Dozen	Wheels Each	Body Each	Slide and Wheel Each	Handle and Screws Each
1W	⅛ to 1	$4.50	$1.44	$.50	$2.10	$.90	$1.20
2W	⅛ to 2	6.00	1.44	.60	3.10	1.20	1.50
3W	½ to 3	10.00	1.44	.80	5.45	2.40	2.70
4B	2½ to 4	20.00	2.40	1.00	11.40	5.40	5.40
5B	4 to 6	30.00	2.40	1.10	16.50	8.40	8.40
6B	6 to 8	40.00	2.40	1.10	24.00	10.20	11.10
6½B	8 to 10	45.00	2.40	1.10	27.60	11.40	12.30
7B	9 to 12	50.00	2.40	1.10	30.00	13.50	13.80

No. 2-F Reed 4-Wheel Pipe Cutters

Capacity ½ to 2-Inch Pipe



A back and forth motion through only ⅛ of a complete circle cuts pipe evenly and quickly like a ratchet threader.

Each of the four wheels exerts exactly the same pressure on the pipe. Can be used in close quarters.

Fitted with Reed razor blade cutter wheels.

Weight, 5 pounds.

No. 2-F.....each	$7.00
Extra Cutter Wheels.....each	.60
Extra Pins.....each	.12

Reed Razor Blade Pipe Cutter Wheels

Made from chrome nickel alloy steel. Cuts easily, leaves little burr, and stands up better than other thicker wheels.

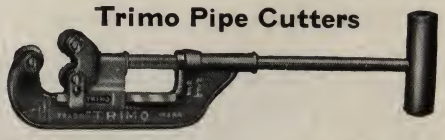
Furnished in either smooth or knurled edges. Smooth edge will be furnished unless otherwise specified.

Smooth Edge

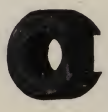
Barnes Type No.	Each	Saunders Type No.	Each
1B	$.50	1S	$.50
2B	.60	2S	.60
3B	.80	3S	1.10
4B	1.00	4S	1.10
5B	1.10	5S	1.10
6B	1.10	**Beaver Type**	
6½B	1.10	102	$.60
7B	1.10	204	.90
Ridgid Type		**Trimo Type**	
1RG	$.60	1T	$.60
2RG	.60	2T	.60
3RG	.90	3T	.90
4RG	.90	4T	1.20

Knurled Edge

Trimo Pipe Cutters



Smooth Edged Wheel



Nut

Roll

A one wheel cutter. Can be converted into 3-wheel cutter by substituting 2 wheels for 2 rolls. Trichrome silvered wheels. No thread in frame or roll block. Small case-hardened nut adjusts handle screw.

Made of drop-forged steel, cadmium plated. Rustproof.

No.		1	2	3	4
Cuts Pipe	inches	⅛–1¼	⅛–2	1–3	2–4
Complete	each	$5.00	$6.00	$10.00	$20.00
Nuts	each	.35	.35	.40	.60
Smooth-Edge Wheels (of Chrome Vanadium Steel) Each		.60	.60	.90	1.20
Teeth-Edged Wheels (of Chrome Vanadium Steel) Each		.60	.60	.90	1.20
Rolls	each	.30	.30	.40	.40
Pins with Cotter Pins	per doz.	1.30	1.30	1.30	2.00
Extra Cotter Pins	per doz.	.20	.20	.20	.20
Anti-Friction Washers	per doz.	.60	.60	.60	.60
Roll Block	each	1.25	1.25	2.25	4.00
Frames	each	2.25	2.50	3.25	9.50
Handle Screws	each	1.00	1.25	2.00	4.00
Handles	each	.50	.50	.50	.60
Roll Block Pin	each	.03	.03	.03	.03
Length Each	inches	15¾	17¼	19½	24
Weight Each	pounds	5¼	6	8¾	13¾

Tricrome Wheels, Pins and Rollers

Knife-Edge Wheel

Cadmium Plated—Red Hubs

Tricrome wheels are made of chrome molybdenum steel.

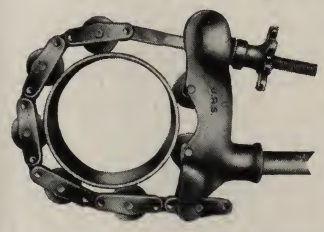
Knurled-edge and knife-edge wheels have same list price.

*Made to fit.

Knurled-Edge Wheel

Cutter No.	Wheels Each Trimo	Wheels Each *Barnes	Wheels Each *Saunders	Pins Per Doz. Trimo	Pins Per Doz. *Barnes	Pins Per Doz. *Saunders	Rollers Each Trimo	Rollers Each *Saunders
1	$.60	$.50	$.50	$1.30	$1.00	$1.20	$.30	$.24
2	.60	.60	.60	1.30	1.00	1.20	.30	.32
3	.90	.80	1.10	1.30	1.00	1.80	.40	.50
4	1.20	1.00	1.10	2.00	2.00	1.80	.40	.50
5	....	1.10	1.10	....	2.00	1.80	...	.60
6	....	1.10	....	....	2.00	....	...	...
6½	....	1.10	....	....	2.00	....	...	...
7	....	1.10	....	....	2.00	...	...	...

J.R.S. Easy Pipe Cutters



Nos. 1 and 2 are for cutting standard or extra heavy soil pipe, in field or job.

Nos. 3 to 6 are for use on cast iron water or gas pipe.

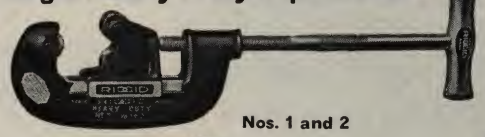
Readily adaptable in any position and can be used for pipe already installed in tight corners or other difficult positions.

Cutter wheels are made of high grade tool steel and have sharp knife edge.

To operate, place chain around pipe to be cut, screw gnarled nut to tight compression of spring, oscillate until cut is made.

No.	1	2	3	4	5	6
Each	$10.00	15.00	30.00	35.00	40.00	50.00
Cuts Pipe in.	1½–4	2–6	2½–6	2½–8	2½–10	2½–12

Ridgid Heavy Duty Pipe Cutters



Nos. 1 and 2

Nos. 3 and 4

Equipped with either heavy duty cutter wheels or Ridgid patented thin blade wheel; may be made 3 wheel.

No.		1	2	3	4
Each		$3.50	4.68	7.80	15.60
Capacity	inches	⅛ to 1¼	⅛ to 2	1 to 3	2 to 4
Weight	pounds	6	7	14½	18

Cutter Roll Pin

Cutter Roll

Wheel for Cast Iron Pipe

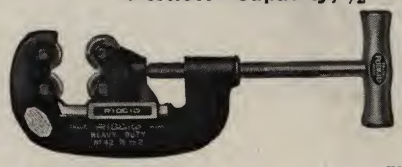
Heavy Duty Wheel

Thin Wheel

No.		1	2	3	4
Thin Wheel	each	$.38	$.38	$.57	$.57
Heavy Duty Wheel	each	.42	.42	.63	.63
Cast Iron Wheel	each	.32	.32	.63	.63
Frame	each	1.57	2.80	3.39	10.41
Screw Handle	each	.58	1.16	2.34	2.34
Pipe Handle	each	...	...	.81	.81
Roll Housing	each	1.05	1.05	1.22	3.50
Roll	each	.20	.20	.51	.51
Pin and Clip		.14	.14	.19	.19

No. 42 Ridgid Pipe Cutters

4-Wheel—Capacity, ½ to 2 Inches



For use in trenches and other close quarters.

Has four heavy duty wheels made from special tool steel. Heavy duty malleable alloy frame.

Can be furnished with wheels for cutting cast iron pipe.

Weight, 6¼ pounds.

No. 42 ..... each $5.46

Parts

Heavy Duty Wheel	each	$.42
Cast Iron Wheel	each	.32
Frame	each	3.15
Screw Handle	each	.58
Roll Housing	each	1.16
Pin and Clip	each	.14

GTD Straight Fluted Burring Reamers

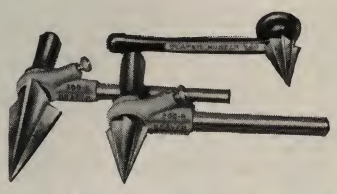
This burring reamer is made of high-grade steel and is designed especially for removing burrs caused by cutting pipe. It may also be used for counter-sinking.

Care is taken in grinding this tool to adapt it for use in a variety of materials.

Has bit brace shank.

No.	0	1	2
Each	$1.25	$1.50	$3.00
Per Dozen	15.00	18.00	36.00
Capacity Pipe ... inches	⅛ to 1	¼ to 1¼	¼ to 2

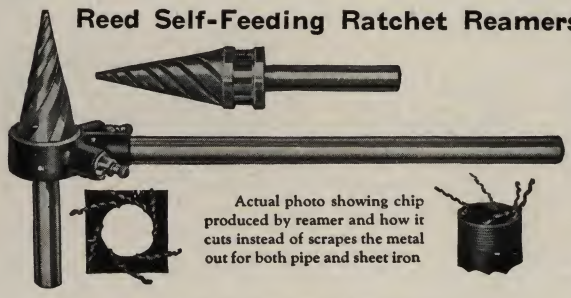
Beaver Alloy Tool-Steel Pipe Reamers



One-piece alloy tool-steel drop-forged cone; no inserted blades to work loose. Handle fashioned to fit the hand, comfortable to use. Nos. 200 and 200R use same 1/8 to 2-inch reamer cone. No. 300R uses a long, lean tapering cone which is really designed to get inside of pipe and clean out the burr completely.

No.	200	200-R	300-R
Each	$5.00	6.00	7.00
Type	Swivel	Ratchet	Ratchet
Size ....inches	1/8 to 2	1/8 to 2	1/4 to 3
Shipping Weight.....pounds	5	6	7 1/2

Reed Self-Feeding Ratchet Reamers



Actual photo showing chip produced by reamer and how it cuts instead of scrapes the metal out for both pipe and sheet iron

Pipe Capacity 1/4 to 2 Inches

No.	*2–71	†2–72
Complete....each	$10.00	$11.00
Cone, Handle and Head, Complete .....each	6.75	7.25
Cone Only....each	5.00	5.00

Used with Reed ratchets series *71 and 81, †72 and 82.

Mueller Pipe End Reamers

Ratchet Pattern

No. 10675

For restoring full pipe area after cutting.

Pipe cutters leave a burr which reduces pipe area.

The ends must be reamed after cutting if the full carrying capacity is to be retained.

The ratchet is so constructed that the strain is divided evenly, greatly increasing the durability of the tool.

	Large	Small
No.	10675	10676
Each	$12.00	8.00
Reams Pipe....inches	3/8 to 3	3/8 to 1 1/4

Toledo Pipe Reamers

Small, compact, easy to operate. Feeds easily with only a slight pressure. Cuts rapidly, leaving a smooth, clean cut.

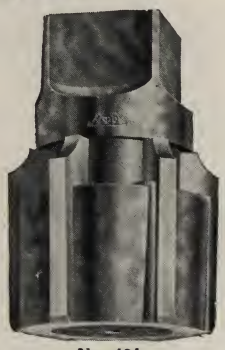
The Junior Ratchet reamer is all steel with multiple tooth head of one-piece, special heat-treated steel. Especially adapted for plumbers and electricians.

The Ratchet reamer has high speed steel cutter blades cast solidly in the head. Can be resharpened when dull.

3/8 to 3-Inch Description	Each	Wt. Lb.
Junior Ratchet, Capacity 1/8 to 2-Inch Pipe....	$5.00	5
Ratchet, Capacity 3/8 to 3-Inch Pipe.....	5.60	8

GTD Taper Pipe Reamers

No. 480



No. 481

For reaming holes to be tapped with American National Standard taper pipe taps. Tapered 3/4 inch per foot.

No. 480 Solid Reamers

Nominal Size Inches	Each	Lands per Set	Diam. Small End, In.	Diam. Large End, In.	Length Overall Inches	Length Flute Inches
1/8	$1.00	....	.316	.362	2 1/8	3/4
1/4	1.20	....	.406	.472	2 7/16	1 1/16
3/8	1.60	....	.540	.606	2 9/16	1 1/16
1/2	2.00	....	.665	.751	3 1/8	1 3/8
3/4	2.80	....	.876	.962	3 1/4	1 3/8
1	4.40	....	1.103	1.212	3 3/4	1 3/4
1 1/4	5.00	....	1.444	1.553	4	1 3/4
1 1/2	6.60	....	1.684	1.793	4 1/4	1 3/4
2	10.00	....	2.159	2.268	4 1/2	1 3/4
No. 481 Reamers with Inserted Lands						
2 1/2	$15.00	$7.50	2.561	2.717	5	2 1/2
3	22.50	7.50	3.183	3.339	5	2 1/2
3 1/2	30.00	8.50	3.679	3.843	5 1/2	2 5/8
4	45.00	8.50	4.174	4.338	5 1/2	2 5/8

Sizes and dimensions not listed are subject to special prices.

No. 192 Cleveland Ezy-Out Screw Extractors

Carbon Steel

This screw extractor is for digging out especially stubborn and deeply imbedded broken screws.

No.	Each	Diam. Large End Inches	Diam. Small End Inches	Use Drill Inches	Length of Flute Inches	Length Overall Inches	For Screws and Bolts, Sizes Inches	For Pipe Size In.
1	$.55	.117	.054	5/64	1/2	2	3/16– 1/4	..
2	.60	.174	.080	7/64	3/4	2 3/8	1/4– 5/16	..
3	.65	1/4	1/8	5/32	1	2 11/16	5/16– 7/16	..
4	.75	21/64	3/16	1/4	1 1/8	2 7/8	7/16– 9/16	1/8
5	.85	7/16	1/4	17/64	1 1/2	3 3/8	9/16– 3/4	1/8, 1/4
6	1.00	19/32	3/8	13/32	1 3/4	3 3/4	3/4–1	3/8
7	1.35	3/4	1/2	17/32	2	4 1/8	1 –1 3/8	1/2
8	1.85	1	3/4	13/16	2	4 3/8	1 3/8–1 3/4	3/4
9	2.65	1 9/32	1	1 1/16	2 1/4	4 5/8	1 3/4–2 1/8	1
10	4.00	1 9/16	1 1/4	1 5/16	2 1/2	5	2 1/8–2 1/2	..
11	5.35	1 7/8	1 1/2	1 9/16	3	5 5/8	2 1/2–3	..
12	6.65	2 5/16	1 7/8	1 15/16	3 1/2	6 1/4	3 –3 1/2	..

No. 15A Sets. For general use around the garage. Contains Nos. 1 to 6 inclusive.....per set **$4.00**

No. 15 Sets. For tool room and lighter repair work. Contains Nos. 1 to 5 inclusive.....per set **$3.00**

No. 16 Sets. Will handle any broken bolt from 1/2 to 1 1/2 inches. For railroad, steel and structural workers.

Known as the heavy shop set. Contains Nos. 6, 7, 8, and 9 .....per set **$6.65**

No. 17 Sets. For general machine shop use. Will handle any bolt, cap or set-screw from 5/16 to 1 inch. Contains Nos. 4, 5, and 6.....per set **$2.35**

No. 20 Sets. For garage or general use. Capable of handling any size bolt, cap, or set screw from small electrical parts to 1-inch studs.

Contains Nos. 1 to 6 inclusive with the proper straight shank drill to use with each extractor.....per set **$5.00**

GTD Pipe Taps

High Speed Steel

Taper—No. 5320 Tru-Lede Commercial Ground Thread—Regular No. 6320 Cut Thread—Regular or Interrupted

Straight—No. 5323 Tru-Lede Commercial Ground Thread No. 6323 Cut Thread

Furnished with American Standard form of thread.

Unless otherwise specified, orders for ⅛-inch pipe taps will be filled with taps having the large shank.

Cut thread taps furnished unless ground thread is specified.

Left-hand taps are special.

Sizes and dimensions not listed are special.

Carbon Steel

No. 320—Taper **No. 323—Straight**

Furnished with American National or British Standard form of thread at regular prices.

Unless otherwise specified orders for ⅛-inch pipe taps will be filled with taps having the large shank.

American National Standard regular taper taps can be furnished with right or left-hand thread.

Left-hand pipe taps with British Standard or interrupted thread are special.

Sizes and dimensions not listed are special.

Nominal Size In.	*High Speed* Taper No. 6320 Reg. No. 5320 Each	*High Speed* Taper No. 6320 Interrupted Each	*High Speed* Straight No. 6323 Reg. No. 5323 Each	Carbon No. 320 Reg. No. 323 Each	Threads per Inch Amer Nat.	Threads per Inch British Std.	Lgth. Thread In.	Lgth. Overall In.
⅛	*$1.60*	*$2.00*	*$1.60*	$1.00	27	28	¾	2⅛
¼	*1.80*	*2.00*	*1.80*	1.20	18	19	1 1/16	2 7/16
⅜	*2.30*	*2.80*	*2.30*	1.60	18	19	1 1/16	2 9/16
½	*4.40*	*5.25*	*4.40*	2.00	14	14	1⅜	3⅛
¾	*6.10*	*7.30*	*6.10*	2.80	14	14	1⅜	3¼
1	*9.20*	*11.10*	*9.20*	4.40	11½	11	1¾	3¾
1¼	*13.10*	*15.75*	.....	5.00	11½	11	1¾	4
1½	*17.70*	*21.25*	.....	6.60	11½	11	1¾	4¼
2	*24.00*	*28.80*	.....	10.00	11½	11	1¾	4½
2½	.....	.....	.....	15.00	8	11	2 9/16	5½
3	.....	.....	.....	22.50	8	11	2⅝	6
3½	.....	.....	.....	30.00	8	11	2 11/16	6½
4	.....	.....	.....	45.00	8	11	2¾	6¾

Ridgid LonGrip Straight Fluted Pipe Extractors

Made with vertical flutes that stand out slightly from tool. Easily driven into pipe end, flutes grooving way firmly down entire length inserted. Will not turn into or out of broken end. No damaging of threads, wedging, bottoming, slipping, reaming, or spreading of pipe.

Separate extractor for each size pipe. Sets in canvas bags.

Ridgid LonGrip Pipe Extractors

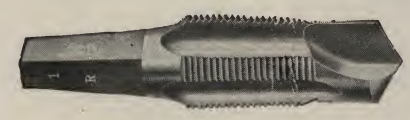
No.	Each	Pipe Size, In.	Flute Diam. O.D., In.	Overall Lgth., In.	Use Drill	No.	Each	Pipe Size, In.	Flute Diam. O.D., In.	Overall Lgth., In.	Use Drill
80	$1.05	⅛	.287	2¼	¼	85	$3.20	1	1.069	3½	1 1/16
81	1.15	¼	.389	2½	⅜	86	4.45	1¼	1.423	3¾	1⅜
82	1.55	⅜	.538	2¾	½	87	6.10	1½	1.676	4	1 9/16
83	1.85	½	.665	3	⅝	875	6.75	1¾	1.806	4¼	1¾
84	2.20	¾	.860	3¼	13/16	89	7.45	2	2.122	4½	2 1/16

Sets of Ridgid LonGrip Pipe Extractors

Sets contain assortments as shown in following table.

No.	Each	Pipe Size, In.	Part Nos.
880	$5.60	⅛– ½	80 to 83 Incl.
881	6.60	¼– ¾	81 to 84 Incl.
882	9.50	¼–1	81 to 85 Incl.
883	10.45	⅛–1	80 to 85 Incl.
889	33.30	⅛–2	80 to 89 Incl.

G T D Combined Pipe Taps and Drills



These taps are used for tapping gas and water mains. They are regularly furnished with taper square shanks but can be made with any special shanks required at special prices. Orders for combined pipe taps and drills with special shanks should be accompanied by detailed drawings.

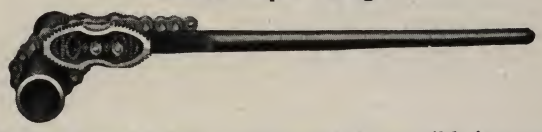
American National Standard right-hand taper threads furnished unless otherwise ordered. British Standard pipe threads furnished at same price if specified.

All sizes and threads not listed are special.

Left-hand taps, and taps with special shanks are special. Prices quoted upon application.

Nominal Size In.	Each	Dimensions, Inches: Size Square Small End	Size Square Large End	Length Square	Length Thread	Length Over All	Diam. Thread Large End	Diam. Thread Small End	Diam. Thread Drill Point
⅛	$2.25	½	¾	1¾	¾	3⅝	.421	.374	.339
¼	2.50	½	¾	1¾	1 1/16	3⅞	.559	.493	.437
⅜	3.00	½	¾	1¾	1 1/16	3⅞	.694	.628	.578
½	3.75	½	¾	1¾	1⅜	4¼	.865	.779	.719
¾	5.00	½	¾	1¾	1⅜	4¼	1.075	.989	.921
1	6.25	½	¾	1¾	1¾	4⅝	1.350	1.241	1.156
1¼	7.50	½	¾	1¾	1¾	4¾	1.693	1.584	1.500
1½	9.25	½	¾	1¾	1¾	4⅞	1.931	1.822	1.734
2	12.00	¾	1	2	1¾	5⅜	2.406	2.297	2.218

Williams' Improved Vulcan Drop-Forged Chain Pipe Tongs



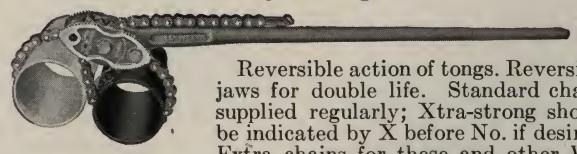
Made of wrought steel. Double ended reversible jaws may be quickly changed, end for end, providing long life. Jaws are fastened to handle with two steel studs.

Furnished with standard flat chain. Each chain is proof-tested and certified. "Xtra-Strong" chain, with 40 per cent greater strength, furnished when specified.

Extra chains for other Williams' tongs are interchangeable, size for size.

No.	Capacity Pipe Inches	Lgth. In.	With Std. Chain Complete Each	With Std. Chain Wt. Lb.	Std. Chain Each	Extra Jaws per Pair	Extra Bolts & Nuts per Set	Xtra-Strong Chain Only No.	Xtra-Strong Chain Only Each
30	⅛– ¾	13¾	$5.00	2	$1.50	$2.00	$.40	X30	$1.65
31	⅛–1½	20	7.00	5¾	2.00	3.50	.50	X31	2.20
32	¼–2½	27	10.00	10	3.00	5.50	.70	X32	3.30
33	¾–4	37	14.00	17	5.00	8.00	.90	X33	5.50
33½	1 –6	44½	18.00	24	7.00	9.50	1.10	X33½	7.70
34	1½–8	50½	22.00	31	9.00	11.00	1.40	X34	9.90
35	2 –12	64½	36.00	52	15.00	15.00	1.80	X35	16.50

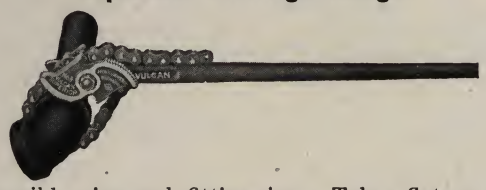
Williams' Vulcan Boll-Weevil Chain Pipe Tongs



Reversible action of tongs. Reversible jaws for double life. Standard chains supplied regularly; Xtra-strong should be indicated by X before No. if desired. Extra chains for these and other Williams' tongs are interchangeable, size for size.

No.	23	23½	24	25
Tongs with Std. Chain...each	$14.00	$18.00	$22.00	$36.00
Standard Chain Only....each	5.00	7.00	9.00	15.00
Tongs with Xtra-Strong Chain...each	14.50	18.70	22.90	37.50
Xtra-Strong Chain Only.each	5.50	7.70	9.90	16.50
Extra Jaws.....per pair	8.00	9.50	11.00	15.00
Capacity, Size Pipe....inches	¾–4	1–6	1½–8	2–12
Extreme Length.....inches	37	44½	50½	64
Weight.....pounds	19	28	41	65

Williams' Vulcan Superior Drop-Forged Pipe and Fittings Tongs



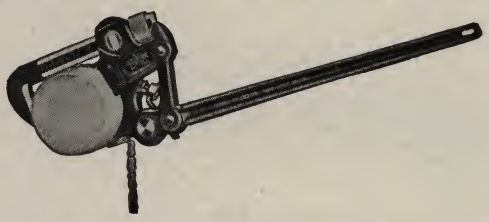
Reversible pipe and fittings-jaws. Takes flat or cable chain. V recess in jaws gives positive grip on fittings.

Standard chains supplied regularly; Xtra-Strong chains of about 40% greater strength, when ordered.

No.	Capacity Pipe Inches	Lgth. In.	Wt., Lb.	Standard Complete Each	Standard Extra Chain Each	*Extra Jaws per Pair	Extra Bolts & Nuts per Set	Xtra-Strong Chain Only No.	Xtra-Strong Chain Only Each
0	⅛– ¾	13¾	2	$5.00	$1.50	$2.00	$.28	X0	$1.65
1	⅛–1½	20	5½	7.00	2.00	3.50	.36	X1	2.20
2	¼–2½	27	10	10.00	3.00	5.50	.46	X2	3.30
3	¾–4	37	17	14.00	5.00	8.00	.60	X3	5.50
3½	1 –6	44½	26	18.00	7.00	9.50	.70	X3½	7.70
4	1½–8	50½	34	22.00	9.00	11.00	.90	X4	9.90
5	2 –12	64½	54	36.00	15.00	15.00	1.30	X5	16.50

*If only a single jaw is wanted, specify right or left.

Ridgid Compound Leverage Pipe Wrenches



Made of Super-X alloy metal. For use in turning pipe or fittings that are frozen and require additional leverage. Operated by putting trunnion on pipe, jaw on fittings (or vice versa), and pumping it on or off.

Multiplies leverage 14 times.

Short handle and short turning movement permit use of these wrenches in close quarters too tight for ordinary wrenches—on concealed piping, close under floors, against walls or in narrow trenches.

No.	S-2	S-4	S-6	S-8
Complete Wrench.....each	$6.80	13.60	17.60	26.40
Capacity Pipe.....inches	2	4	6	8
Weight.....pounds	6	28	40	60

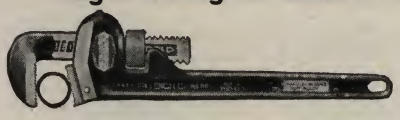
Parts

No.	S-2	S-4	S-6	S-8
Trunnion Assembly.....each	$4.55	$9.05	$10.25	$15.40
Trunnion.....each	1.20	2.40	3.20	4.80
Link Chain.....each	1.60	3.20	3.60	5.40
Vise Handle.....each	.60	1.20	1.20	1.80
Nut for Screw.....each	.55	1.15	1.15	1.70
Screw.....each	.55	1.15	1.15	1.70
Handle.....each	1.20	2.40	2.80	4.20
Head.....each	.80	1.60	2.80	4.20
Rivet.....each	.05	.10	.10	.15
Side Bar.....each	.15	.35	.50	.75

Specialties

- It is not practical for us to list many items used for special service.
- Let us help you with problems where special material is required.

Ridgid Straight Pattern Pipe Wrenches



Powerful all-alloy housing and handle; housing guaranteed not to break or warp. Chrome molybdenum jaws will not slip or lock on pipe. Replaceable heel jaw, full-floating hook jaw with handy pipe scale. Adjusting nut spins easily in open housing in all sizes.

Packed 6 in a box, 6 to 24-inch inclusive.

Size In.	Each	Cap. In.	Wt. Lb.	Size In.	Each	Cap. In.	Wt. Lb.
6	$1.90	¾	½	18	$5.50	2½	5¼
8	2.20	1	¾	24	9.50	3	8¾
*10	2.85	1½	1¾	36	20.00	4½	16¼
12	3.35	2	2¾	48	30.00	6	28
†14	3.85	2	3½	60	45.00	8	43¼

*Complete with rubber grip, $3.15 each.
†Complete with rubber grip, $4.25 each.

Ridgid End Pattern Pipe Wrenches

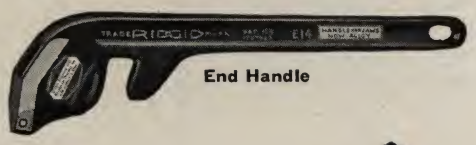
For work where pipe is close to wall or in tight places. Powerful all-alloy handle and housing; housing guaranteed not to break or warp. Chrome molybdenum jaws will not slip or lock on pipe. Replaceable heel jaw, full-floating hook jaw with handy pipe scale. Adjusting nut spins easily in all sizes.

Packed 6 in a box, 6 to 24-inch inclusive.

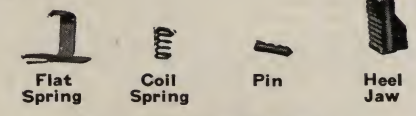
Size.....in.	E6	E8	*E10	E12	†E14	E18	E24	E36
Each.....	$1.90	2.20	2.85	3.35	3.85	5.50	9.50	20.00
Cap.....in.	¾	1	1½	2	2	2½	3	4½
Wt.....lb.	½	¾	1¾	2¾	3½	5¼	8¾	16¼

*Complete with rubber grip, $3.15 each.
†Complete with rubber grip, $4.25 each.

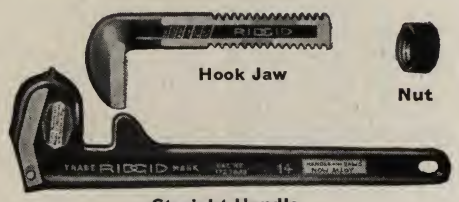
Parts for Ridgid Pipe Wrenches



End Handle



Flat Spring — Coil Spring — Pin — Heel Jaw



Hook Jaw — Nut — Straight Handle

Size In.	Handle Assembly Straight Each	Handle Assembly End Each	Hook Jaw Each	Heel Jaw & Pin Each	Pin Each	Coil Spring Each	Flat Spring Each	Nut Each	Rubber Grip Each
6	$1.75	$1.75	$.65	$.40	$.03	$.03	$.20	$.15	....
8	1.95	1.95	.70	.45	.03	.03	.20	.15	....
10	2.50	2.50	1.10	.55	.04	.03	.20	.20	$.40
12	2.85	2.85	1.25	.65	.04	.03	.25	.25	....
14	3.45	3.45	1.50	.65	.04	.03	.30	.30	.50
18	4.95	4.95	2.15	.75	.04	.04	.40	.35	....
24	7.95	7.95	3.50	.85	.04	.04	.50	.55	....
36	15.00	15.00	5.70	1.15	.05	.04	.60	1.10	....
48	25.00	.....	9.00	2.05	.05	.04	.80	2.00	....
60	35.00	.....	17.00	4.55	.05	.04	1.50	4.00	....

Walworth Genuine Stillson Wrenches

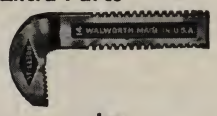
Sizes 6 to 48-inch, with steel handle; 6 to 14-inch, inclusive, also with wood handle. Made to new Federal Spec. GGG-W-651a for Type I Normal Duty Adjustable Pipe Wrenches.

Length Open Inches	Takes Pipe Inches	Compl. with Steel Handle Each	Compl. with Wood Handle Each	Length Open Inches	Takes Pipe Inches	Compl. with Steel Handle Each
6	⅛ to ½	$1.90	$2.00	18	¼ to 2	$5.50
8	⅛ to ¾	2.20	2.30	24	¼ to 2½	9.50
*10	⅛ to 1	2.85	3.15	36	¼ to 3½	20.00
*14	¼ to 1½	3.85	4.25	48	1 to 5	30.00

*Furnished with steel handles, unless otherwise specified.

Extra Parts

Frame


Jaw

Adjusting Nut

Steel Handle Bar

For Wrench In.	Bar with Springs Each	Jaws Each	Frame and Pin Each	Frame Pin Only Each	Adjusting Nuts Each	Wood Hdle. & Ferrule Each	End Nuts Each	Front Springs Each	Back Springs per Pr.	Spring Pins or Rivets Each
6	$1.00	$.65	$.45	$.03	$.15	$.23	$.15	$.10	...	$.01
8	1.15	.70	.55	.03	.15	.25	.15	.10	...	.01
10	1.60	1.10	.70	.04	.20	.30	.20	.10	$.20	.02
14	2.20	1.50	.80	.04	.30	.36	.20	.10	.20	.02
18	3.25	2.15	.95	.04	.35	...	...	.10	.20	.02
24	5.15	3.50	1.75	.04	.55	...	...	.11	.22	.02
36	10.50	5.70	2.75	.05	1.10	...	...	.13	...	.02
48	17.00	9.00	3.50	.05	2.00	...	...	.13	...	.02

No. 4111 Walco Pipe Wrenches

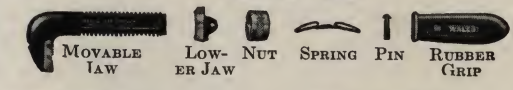
A heavy duty wrench forged of a high grade tool steel. The drop forging of the handle and the jaw housing in one piece is a feature furnishing both simplicity and strength. Heat treatment of all parts by precision methods gives extra strength and toughness.

The renewable lower jaw has cross tongues on its under side which fit into a cross slotted seat on the handle. This new construction eliminates all backward shear on its pin, locks it securely in place against loosening, and yet permits easy renewal. Black rust proof Parkerized finish with cadmium plated nut.

Made to new Federal Specifications GGG-W-651a for Type II, Heavy Duty Adjustable Pipe Wrenches.

Lgth. Open In.	Takes Pipe In.	Each	Lgth. Open In.	Takes Pipe In.	Each	Lgth. Open In.	Takes Pipe In.	Each
6	⅛ to ½	$1.90	14	¼ to 1½	$3.85	36	¼ to 4	$20.00
8	⅛ to ¾	2.20	18	¼ to 2	5.50	48	1 to 6	30.00
10	⅛ to 1	2.85	24	¼ to 2½	9.50	..	.....	.....

Extra Parts



Size In.	Movable Jaw Each	Renewable Lower Jaw & Pin Each	Nut Each	Spring Each	Size In.	Movable Jaw Each	Renewable Lower Jaw and Pin Each	Nut Each	Spring Each
6	$.65	...	$.15	$.25	18	$2.15	$.95	$.35	$.50
8	.70	...	.15	.30	24	3.50	1.10	.55	.60
10	1.10	$.65	.20	.35	36	5.70	1.50	1.10	.70
14	1.50	.85	.30	.40	48	9.00	2.00	2.00	.80

Pins only for lower jaw, 10 to 24-inch, 4 cents each; 36 and 48-inch, 5 cents each. Rubber grips for 8-inch, 30 cents; 10-inch, 40 cents; 14-inch, 50 cents.

"Trimo-Alloy" Pipe Wrenches

Heavy Duty—Drop Forged

Made entirely of heat-treated chrome-molybdenum, manganese and nickel steel alloys.

All sizes are furnished with steel handle only.

Length Open Inches	Each	Takes Pipe Inches	Weight Pounds Each	Length Open Inches	Each	Takes Pipe Inches	Weight Pounds Each
6	$1.90	⅛ to ½	7/16	18	$5.50	¼ to 2	5
8	2.20	⅛ to ¾	¾	24	9.50	¼ to 2½	8½
10	2.85	⅛ to 1	1½	36	20.00	½ to 3½	16¾
12	3.35	⅛ to 1¼	2¼	48	30.00	1 to 5	24
14	3.85	¼ to 1½	3	..	.....	.....	....

Extra Parts

Jaw Inserted Jaw Frame Nut Nut with Guard Inserted

For Wrench In.	Movable Jaw Each	Nuts Each	Insert Jaws and Pins Each	Frames and Pins Each	Springs and Pins Each	Extra Frame Pins Each	Extra Jaw Pins Each	Steel Handles Each	Nut Guards per Pr. Each
6	$.65	$.15	$.50	$.45	*$.03	$.03	$.03	$1.00	$.15
8	.70	.15	.55	.55	*.03	.03	.03	1.15	.15
10	1.10	.20	.65	.70	.03	.04	.04	1.60	.20
12	1.25	.25	.75	.75	.03	.04	.04	1.80	.30
14	1.50	.30	.85	.80	.03	.04	.04	2.20	.30
18	2.15	.35	.95	.95	.04	.04	.04	3.25	.35
24	3.50	.55	1.10	1.75	.04	.04	.04	5.15	.45
36	5.70	1.10	1.50	2.75	.04	.05	.05	10.50	.55
48	9.00	2.00	2.00	3.50	.04	.05	.05	17.00	.65

*Furnished with springs but without spring pin.

Warnock Improved Type Strap Wrenches

For use on nickel plated or polished brass pipe and tubing. Has flexible woven strap, drop forged shackle and enameled unbreakable handle, quickly adjustable. Will not crush pipe or tubing.

			Heavy Duty	
Length.....inches	12	18	18	24
Each.....	$2.50	$5.00	$10.00	$12.00
Extra Straps.....each	.50	1.00	2.50	3.00
Strap.....inches	12x1⅛	18x1¾	30x2¼	42x2¼
Takes Pipe.....inches	⅛ to 2	1 to 5	1 to 8	1 to 12

Extra Special Straps, 18x1⅛ In. for 12 In. Wrench.....each $.75

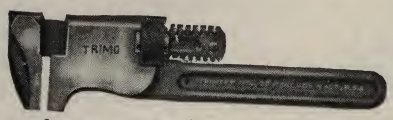
Walworth Parmelee Pipe Wrenches

No. 4

Grips with equal pressure all around the pipe, which prevents crushing.

No.	Lgth. In.	Takes Pipe In.	Complete Each	Without Girths Each	Extra Girths Size I.P.S. In.	Extra Girths Each	Slip Pins Each	Lock Bolts Each	Adjust. Nuts Each
1	10	⅜—1	$8.50	$2.75	⅜–½–¾–1	$1.75	$.20	$.40	$.20
2	20	1 —2	15.00	6.00	1–1¼	2.50	.25	.50	.40
					1½–2	3.00	.25	.50	.40
3	20	2 —3	17.00	7.00	2–2½–3	4.00	.25	.60	.70
4	37	3 —4	52.00	21.00	3 and 4	17.00	.70	.80	2.00

Trimo Steel Handle Monkey Wrenches

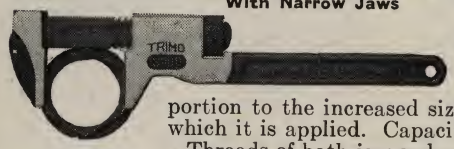


Leverage increases in proportion to increased size of nut to which it is applied. Nut guard prevents accidental turning of adjusted screw.

Length Inches	Opens Inches	Price per Dozen Semi-Bright	Price, Each: Jaw with Pin	Handle with Housing	Nut	Price per Pair Nut Guards
6	1	$15.00	$.75	$.75	$.15	$.23
8	1 5/16	18.00	.90	.83	.15	.23
10	1 3/4	22.00	1.10	1.02	.22	.32
12	2 1/4	28.00	1.25	1.17	.28	.47
15	2 5/8	38.00	1.90	1.90	.33	.56
18	3 1/4	48.00	2.03	2.40	.38	.60
21	4 1/8	58.00	2.46	2.83	.49	.67

Trimo Adjustable Spud Wrenches

With Narrow Jaws



So constructed that the leverage increases in proportion to the increased size of the nut to which it is applied. Capacity, 2 5/8 pounds. Threads of both jaw and nut rounded.

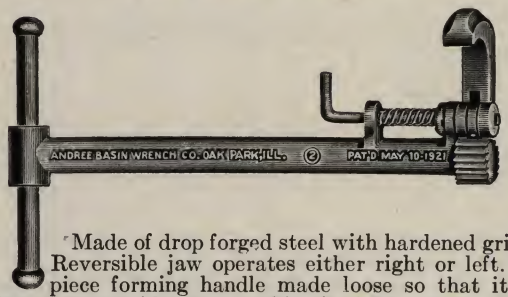
Price, 12-Inch.....per dozen $28.00

Trimo Basin Wrenches

Can be used in close quarters. Operated with one hand. Length, 10 inches. Opens, 1 3/4 inches. Weight, 1 7/8 pounds.

Description	Each
Wrenches.....	$1.25
Extra Jaws.....	.50
Extra Nuts.....	.20
Extra Springs....	.10
Extra Screws....	.20

Andree Wrenches



Made of drop forged steel with hardened grip teeth. Reversible jaw operates either right or left. Cross-piece forming handle made loose so that it can be shoved to one side when working in tight corners. Equipped with large jaw for basin nuts. Works automatically. No adjustments necessary.

With Large Jaw only.....each $2.50
With Both Large and Small Jaws.....each 3.10

No. 225 Otto Bernz Buzzell Basin Wrenches

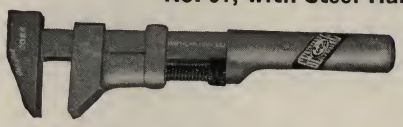
The entire tool is made of malleable iron.

Weight, 18 pounds per dozen.

No. 225.....each $1.65

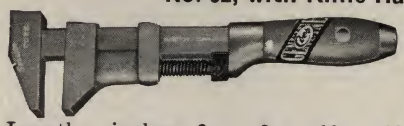
Billings Genuine Coes Monkey Wrenches

No. 91, with Steel Handles



The handle is a semi-steel casting of patented design.

No. 92, with Knife Handles



The handle is a cast semi-steel frame with hardwood grips.

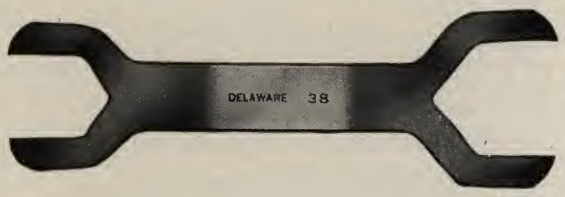
Length...inches	6	8	10	12	15	18	21
Per Dozen....	$15.00	18.00	22.00	28.00	38.00	48.00	58.00
Opens..inches	7/8	1 1/4	1 3/4	2 1/4	2 5/8	3	4 1/8
Weight.pounds	8 1/2	14 1/2	30	40	56	78	109

Nye Closet Spud Wrenches

A light, handy tool for the plumber. Strong enough to stand any strain. Sizes, 1 1/4x1 1/2, 1 1/4x2 and 1 1/2x2 inches.

Price, Shipping Weight, 1 3/8 Pounds.....each $.65

No. 38 Closet Spud Wrenches



Number.....	38	38A
Size.....inches	1 1/4x2	1 1/2x2
Each.....	$1.25	1.25

Nye Union Valve-Nipple Wrenches

Takes sizes 3/8 to 2 inches inclusive. Made so that when inserted in a radiator union valve it catches the nipple at the base, thus avoiding mashing it.

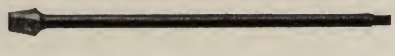
Wrench, Ship. wt. 3 lb.....each $1.20
Ratchet Handle Only, Ship. wt. 4 1/4 lb.....each 4.00

Indirect Radiator Wrenches

Made especially for assembling wall radiators. For 1 1/2-inch nipples.

Each.....

Direct Radiator Wrenches



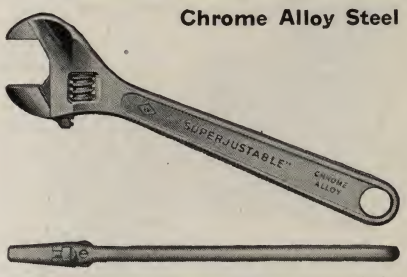
For 1 1/2-inch nipples.

2-Feet Long.....each ....

4-Feet Long.....each ....

Williams' Superjustable Wrenches

Chrome Alloy Steel



Drop forged, with thin, tapered jaws.

Sliding jaw shank has square shoulders which eliminate spreading action and permit a thicker web on the jaw.

Furnished chrome plated, head highly polished, shank satin finished.

Packed 1 in a cardboard box.

Size In.	Each	Extra Parts: Jaw Each	Knurl Each	Pin Each	Spring Each	Thickness Head: Capacity	Tip of Jaws	Extreme
4	$1.30	$.44	$.18	$.06	$.06	1/2	9/64	5/16
6	1.30	.44	.18	.06	.06	3/4	7/32	3/8
8	1.60	.56	.21	.06	.06	15/16	17/64	1/2
10	2.05	.74	.24	.06	.06	1 1/8	23/64	19/32
12	2.95	1.06	.38	.15	.06	1 5/16	15/32	23/32
15	4.45	1.60	.62	.15	.06	1 3/4	19/32	31/32
*18	7.35	2.20	1.00	.15	.06	2 1/16	23/32	1 3/16

*Diamond brand.

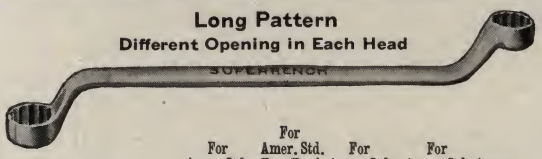
Williams' Chrome Molybdenum 12-Point Box Superrenches

Double Offset Heads

Thin head walls permit use in close quarters. Each head has a 12-point opening. Forged from chrome-molybdenum steel, heat treated. Chrome plated over nickel.

Long Pattern

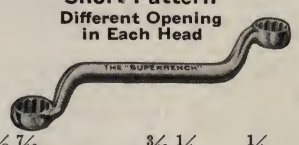
Different Opening in Each Head



No.	Each	Nominal Openings Inches	For Amer. Std. Heavy Nut; Size Bolt Inches	For Amer. Std. Hex. Head Cap Screws; Dia. Screw Inches	For Amer. Std. Light Nut; Size Bolt Inches	For Amer. Std. Reg. Nuts; Size Bolt Inches	Approx. Extreme Length Inches	Wt. Lb
8021	$.80	5/16, 13/32	1/8, 3/16	1/8, ..	.....	.....	7 1/4	.18
8723	.95	3/8, 7/16	.....	3/16, 1/4	.., 1/4	.., 1/4	7 3/4	.26
8725	.95	7/16, 1/2	.., 1/4	1/4, 5/16	1/4, 5/16	1/4, ..	8 1/4	.37
8725B	1.00	1/2, 9/16	1/4, ..	5/16, 3/8	5/16, 3/8	.., 5/16	8 3/4	.43
8025	1.00	1/2, 19/32	1/4, 5/16	5/16, ..	5/16, ..	.....	8 3/4	.43
8727	1.05	9/16, 5/8	.....	3/8, 7/16	3/8, 7/16	5/16, 3/8	9 3/4	.59
8727A	1.20	5/8, 11/16	.., 3/8	7/16, ..	7/16, ..	3/8, ..	11	.8
8729	1.20	5/8, 3/4	.....	7/16, 1/2	7/16, 1/2	3/8, 7/16	11	.8
8729A	1.40	3/4, 25/32	.., 7/16	1/2, ..	1/2, ..	7/16, ..	12 1/2	1.
8731A	1.40	3/4, 7/8	.., 1/2	1/2, 5/8	1/2, 9/16	7/16, 9/16	12 1/2	1.
8731B	1.40	13/16, 7/8	.., 1/2	9/16, 5/8	.., 9/16	1/2, 9/16	12 1/2	1.
8033	1.65	7/8, 31/32	1/2, 9/16	5/8, ..	9/16, ..	9/16, ..	13 1/2	1.3
8033C	1.85	15/16, 1	.....	.., 3/4	5/8, 11/16	.., 5/8	14 1/2	1.14
8735A	3.30	1 1/16, 1 1/8	5/8, ..	7/8, ..	3/4, ..	.., 3/4	17	2.3
8039	3.80	1 1/4, 1 7/16	3/4, 7/8	.....	7/8, 1	.....	19	3.3
8039A	3.80	1 5/16, 1 1/2	.....	1, 1 1/8	.....	7/8, 1	19	3.3
For Heavy Service—Round Handle								
8041	$4.95	1 7/16, 1 5/8	7/8, 1	.....	1, 1 1/8	.....	23	5.79
8045	8.45	1 13/16, 2	1 1/8, 1 1/4	.....	1 1/4, 1 3/8	.....	25	8.43
8049	10.60	2 3/16, 2 3/8	1 3/8, 1 1/2	.....	1 1/2, ..	.....	27	10.29
8053	16.25	2 9/16, 2 3/4	1 5/8, 1 3/4	.....	.....	.....	30	14.65

Short Pattern

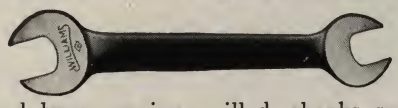
Different Opening in Each Head



9723	$.95	3/8, 7/16	.....	3/16, 1/4	.., 1/4	.., 1/4	4 1/2	.10
9725	1.00	7/16, 1/2	.., 1/4	1/4, 5/16	1/4, 5/16	1/4, ..	5 1/2	.19
9725B	1.00	1/2, 9/16	1/4, ..	5/16, 3/8	5/16, 3/8	.., 5/16	5 1/2	.22
9727	1.10	9/16, 5/8	.....	3/8, 7/16	3/8, 7/16	5/16, 3/8	6	.29

Williams' Superior Drop-Forged Engineers' Wrenches

Carbon Steel—15° Angle, Double Head



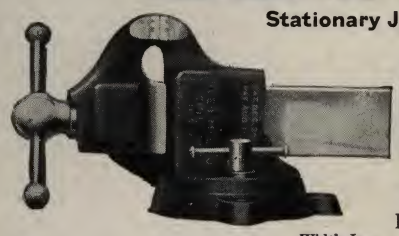
Unfinished have openings milled, shanks smooth, are hardened and shot-blasted. Sizes stamped on heads.

Finished have openings milled, surface and edges smoothed, sizes stamped on heads, hardened and black enameled (baked on)—heads bright.

No.	Unfinished Each	Finished Each	For U.S. Std. Nuts; Size Bolts Inches	For Hex. Head Cap-Screws; Diam. Screw Inches	For S.A.E. Std. Nut and Cap-Screws; Size Bolts Inches	For Amer. Std. Nuts; Reg. and Jam Size Bolts Inches	Nominal Openings Inches	Extreme Lgth. Approx. Inches
721	$.28	$.34	1/8	1/8, 3/16	.....	.....	5/16, 3/8	4 1/8
21	.28	.34	1/8, 3/16	1/8	.....	.....	5/16, 13/32	4 1/8
722	.34	.42	1/8	1/8, 1/4	1/4	1/4	5/16, 7/16	4 1/2
22	.34	.42	1/8, 1/4	1/8, 5/16	5/16	.....	5/16, 1/2	4 1/2
723	.34	.42	.....	3/16, 1/4	1/4	1/4	3/8, 7/16	4 1/2
723A	.34	.42	1/4	3/16, 5/16	5/16	.....	3/8, 1/2	4 7/8
23	.34	.42	3/16, 1/4	5/16	5/16	.....	13/32, 1/2	4 7/8
24	.40	.50	3/16, 5/16	.....	.....	.....	13/32, 19/32	5 1/4
725	.40	.50	1/4	1/4, 5/16	1/4, 5/16	1/4	7/16, 1/2	5 1/4
725A	.40	.50	.....	1/4, 3/8	1/4, 3/8	1/4, 5/16	7/16, 9/16	5 1/4
25A	.40	.50	.....	1/4, 7/16	1/4, 7/16	1/4, 3/8	7/16, 5/8	5 3/4
725B	.40	.50	1/4	5/16, 3/8	5/16, 3/8	5/16	1/2, 9/16	5 3/4
25	.40	.50	1/4, 5/16	5/16	5/16	.....	1/2, 19/32	5 3/4
726	.50	.62	1/4	5/16, 7/16	5/16, 7/16	3/8	1/2, 5/8	6 1/4
26	.50	.62	1/4, 3/8	5/16	5/16	.....	1/2, 11/16	6 1/4
727	.50	.62	.....	3/8, 7/16	3/8, 7/16	5/16, 3/8	9/16, 5/8	6 1/4
27	.50	.62	5/16, 3/8	.....	.....	.....	19/32, 11/16	6 3/4
728	.60	.74	.....	3/8, 1/2	3/8, 1/2	5/16, 7/16	9/16, 3/4	7 1/4
28	.60	.74	5/16, 7/16	.....	.....	.....	19/32, 25/32	7 1/4
729	.60	.74	.....	7/16, 1/2	7/16, 1/2	3/8, 7/16	5/8, 3/4	7 1/4
29	.60	.74	3/8, 7/16	.....	.....	.....	11/16, 25/32	7 7/8
730	.74	.90	.....	7/16, 9/16	7/16	3/8, 1/2	5/8, 13/16	8 1/2
730A	.74	.90	1/2	7/16, 5/8	7/16, 9/16	3/8, 9/16	5/8, 7/8	8 1/2
30	.74	.90	3/8, 1/2	5/8	9/16	9/16	11/16, 7/8	8 1/2
731	.74	.90	.....	1/2, 9/16	1/2	7/16, 1/2	3/4, 13/16	9 1/8
731A	.74	.90	1/2	1/2, 5/8	1/2, 9/16	7/16, 9/16	3/4, 7/8	9 1/8
31	.74	.90	7/16, 1/2	5/8	9/16	9/16	25/32, 7/8	9 1/8
731B	.74	.90	1/2	9/16, 5/8	9/16	1/2, 9/16	13/16, 7/8	9 1/8
32	.90	1.10	7/16, 9/16	.....	.....	.....	25/32, 31/32	10
732	.90	1.10	.....	9/16, 3/4	...	1/2, 5/8	13/16, 1	10
33A	.90	1.10	1/2	5/8	9/16, 5/8	9/16	7/8, 15/16	10
33	.90	1.10	1/2, 9/16	5/8	9/16	9/16	7/8, 31/32	10
733	.90	1.10	1/2	5/8, 3/4	9/16	9/16, 5/8	7/8, 1	10
34	1.12	1.36	1/2, 5/8	5/8	9/16, 3/4	9/16	7/8, 11/16	11
734	1.12	1.36	1/2	5/8, 7/8	9/16	9/16, 3/4	7/8, 1 1/8	11
34A	1.12	1.36	5/8	.....	5/8, 3/4	.....	15/16, 1 1/16	11
35	1.12	1.36	9/16, 5/8	.....	3/4	.....	31/32, 1 1/16	11
735	1.12	1.36	.....	3/4, 7/8	.....	5/8, 3/4	1, 1 1/8	11
36	1.62	1.92	9/16, 3/4	.....	7/8	.....	31/32, 1 1/4	12 3/8
736A	1.62	1.92	.....	3/4, 1	.....	5/8, 7/8	1, 1 5/16	12 3/8
37	1.62	1.92	5/8, 3/4	.....	3/4, 7/8	.....	1 1/16, 1 1/4	12 3/8
37A	1.62	1.92	.....	7/8, 1	.....	3/4, 7/8	1 1/8, 1 5/16	12 3/8
38	2.40	2.80	5/8, 7/8	.....	3/4, 1	.....	1 1/16, 1 7/16	14
38A	2.40	2.80	.....	7/8, 1 1/8	.....	3/4, 1	1 1/8, 1 1/2	14
39	2.40	2.80	3/4, 7/8	.....	7/8, 1	.....	1 1/4, 1 7/16	14
39A	2.40	2.80	.....	1, 1 1/8	.....	7/8, 1	1 5/16, 1 1/2	14
40	3.30	3.80	3/4, 1	.....	7/8, 1 1/8	.....	1 1/4, 1 5/8	15 3/4
40A	3.30	3.80	.....	1, 1 1/4	.....	7/8, 1 1/8	1 5/16, 1 11/16	15 3/4
41	3.30	3.80	7/8, 1	.....	1, 1 1/8	.....	1 7/16, 1 5/8	15 3/4
42	4.60	5.30	7/8, 1 1/8	.....	1, 1 1/4	.....	1 7/16, 1 15/16	17
42A	4.60	5.30	.....	1 1/8, 1 1/4	.....	1, 1 1/8	1 1/2, 1 11/16	17
42B	4.60	5.30	.....	1 1/8	.....	1, 1 1/4	1 1/2, 1 7/8	17
43	4.60	5.30	1, 1 1/8	.....	1 1/8, 1 1/4	.....	1 5/8, 1 13/16	17
44	6.25	7.20	1, 1 1/4	.....	1 1/8, 1 3/8	.....	1 5/8, 2	19
44A	6.25	7.20	.....	1 1/4	.....	1 1/8, 1 1/4	1 11/16, 1 7/8	19
45	6.25	7.20	1 1/8, 1 1/4	.....	1 1/4, 1 3/8	.....	1 13/16, 2	19
46A	9.30	10.50	.....	1 1/4	.....	1 1/8, 1 1/2	1 11/16, 2 1/4	21
46	9.30	10.50	1 1/8, 1 3/8	.....	1 1/4, 1 1/2	.....	1 13/16, 2 3/16	21
47A	9.30	10.50	.....	.....	.....	1 1/4, 1 1/2	1 7/8, 2 1/4	21
47	9.30	10.50	1 1/4, 1 3/8	.....	1 3/8, 1 1/2	.....	2, 2 3/16	21
48	12.50	14.00	1 1/4, 1 1/2	.....	1 3/8	.....	2, 2 3/8	23
49	12.50	14.00	1 3/8, 1 1/2	.....	1 1/2	.....	2 3/16, 2 3/8	23

Reed Machinists' Vises

Stationary Jaw—Swivel Base

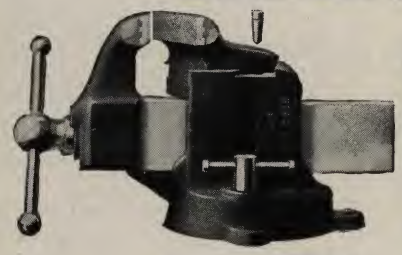


Made of steel and iron mixture. Alloy steel jaw facings welded on. Screw and handle heat treated, high carbon alloy steel. Hardened and tempered. All partsinterchangeable.

No.	Each	Width Jaw Inches	Jaws Open Inches	Wt. Lb.
203	$13.00	3	4	27
203½	15.00	3½	5	38
204	17.00	4	6	51
204½	20.00	4½	7	66
205	30.00	5	8	89
206	52.00	6	10	153
208	98.00	8	12	278

Reed Machinists' Vises

Swivel Jaw—Swivel Base



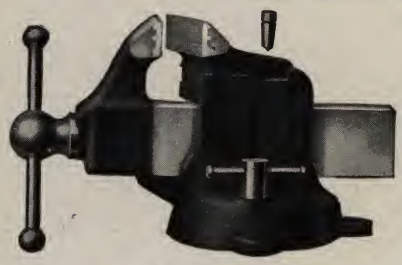
Made of steel and iron mixture. Alloy steel jaw facings welded on. Screw and handle heat treated, high carbon alloy steel. Hardened and tempered.

All parts interchangeable.

No.	Each	Width Jaw Inches	Jaws Open Inches	Wt. Lb.
403½	$20.00	3½	4	43
404	24.00	4	4¾	58
404½	28.00	4½	5½	75
405	35.00	5	6½	98
406	60.00	6	9	164

Reed Toolmakers' or Filers' Vises

Swivel Jaw—Swivel Base



Swivel jaw action is smooth, easy and automatic. Has tool steel jaw facings welded on; deep throat and high jaws for filing and fitting work.

No.	Each	Width Jaw, In.	Jaws Open, In.	Depth Opening, In.	Weight Pounds
414	$24.00	4	4¾	3¾	57
414½	28.00	4½	5½	4¼	72
415	36.00	5	6¾	4¾	98

Reed Vise Jaw Caps

Made to protect fine work from milled faces of jaws of vises.

Fingers hold brass clamps firmly in place so that they will not fall or jar off.

Give No. of vise and width of jaw.

Width Jaws..in.	3	3½	4	4½	5	5½	6
Per Pair.....	$1.50	1.80	2.10	2.50	3.10	4.00	5.00

Reed Combination Pipe Vises

Swivel Base

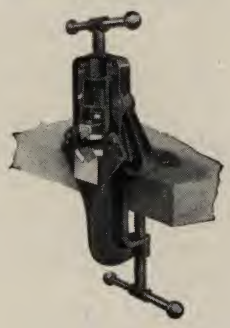
Designed for severe service.

Pipe jaws, milled from solid tool steel bars, tempered in oil, do not extend beyond vise jaws and will not interfere when vise is used as a machinist's vise.

No.....	1C	2C	3C	4C
Vises.....each	$17.50	$24.00	$38.00	$60.00
Jaws (2) per set	2.70	3.60	6.00	9.00
Holds Pipe..in.	⅛ to 2½	⅛ to 3½	¼ to 4½	¼ to 6
Width Jaw...in.	3½	4½	5	6
Weight.....lbs.	54	83	120	185

Reed Long Jaw Clamp Pipe Vises

A self-locking vice heavy enough and strong enough for average work, yet sufficiently light to be carried in the kit with other tools.



Long bearing pipe jaws eliminate marring, crushing, or bending the pipe. Can be clamped to a pipe as well as to a post or bench. The Nos. 10 and 11 clamp on 3½-inch pipe and the No. 100 on 2-inch pipe.

No.....	100	10	11
Each.....	$4.50	$5.00	$6.50
Set of 3 Jaws	1.50	1.80	1.80
Holds Pipe .....in.	⅛–1½	⅛–2	⅛–2½
Clamp Opening...in.	2½	4	4
Weight...lb.	8½	12	14

Reed Long Jaw Pipe Vises

The long jaws eliminate the tendency to mar, end or crush any kind of pipe. The lower jaws are reversible, doubling their period of efficient service.

Equipped with positive devices for taking up wear. Has strong and convenient pipe bender.

No.	Each	Jaws (3) per Set	Holds Pipe Inches	Weight Pounds
00	$3.60	$1.50	⅛ to 1½	6
0	4.25	1.80	⅛ to 2	8
1	5.00	1.80	⅛ to 2½	11
2	7.50	2.55	⅛ to 3½	18
3	11.00	3.60	⅛ to 4½	27

Reed Extra Heavy Pipe Vises

Large Capacity

The pipe jaws are cut from fine tool steel bars. They are carefully tempered and each one is inspected.

The vise frame is made of certified malleable.

The base has a flat bottom and no apron so it can be mounted on any plain surface.

No.	Each	Jaws (3) per Set	Holds Pipe Inches	Weight Pounds
64	$23.50	$6.00	⅛ to 6	49
65	47.50	8.55	1 to 8	81
66	70.00	13.50	1½ to 12	163

No. 51 Reed Strap Vises

For Polished Pipe and Tubing

No separate bushing is required for each size because the vise has an adjustable strap. Change for different sizes is made instantly with tightening screw.

The straps are of fine grade webbing and are subject to very little wear in use. Rosin or chalk should be used to prevent slipping.

Holds pipe, 1/8 to 2 inches.

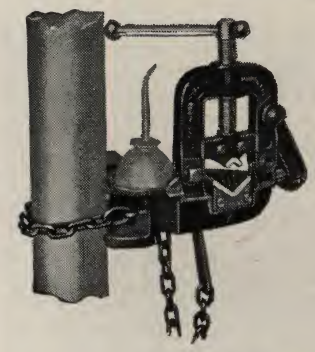
Length strap, 17 inches; width strap, 2 1/8 inches.

Weight, 9 1/2 pounds.

No. 51 Vise.....each **$4.00**
Extra Strap.....each **.75**

No. P-Y-2 1/2 Ridgid Post Vises

Capacity 1/8 to 2 1/2 Inches



Strong, special malleable metal frame. Hardened tool steel jaws.

No-Mar jaws. Handy pipe rest and pipe bender. Attached quickly to any post.

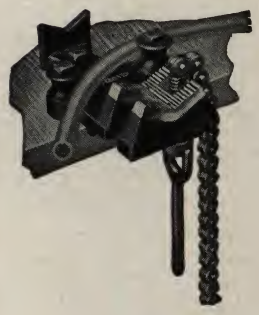
Chain and wrench fastened to vise. Handy dope pot and oil can holder.

Weight, 21 1/2 pounds.

No. P-Y-2 1/2....each **$8.55**

Ridgid Chain Bench Vises

Capacity, 1/8 to 8 Inches



Handy and efficient.

Special malleable frame, jaws of high quality tool steel.

Has pipe rest and bender.

No.	Each	Cap. In.	Bending. Cap. In.	Ship. Wt. Lb.
BC-2	$3.85	1/8–2 1/2	1	5 1/2
BC-4	8.25	1/4–4	1	13 1/2
BC-5	11.00	1/4–5	1	12
BC-6	14.85	1/2–6	1	20 1/4
BC-8	19.80	1/2–8	1 1/4	33 1/4

Toledo Open-Side Pipe Vises

Excellent for brass or copper pipe and for fitting make-up work. No need of unlatching and tipping back a yoke for long lengths of pipe. Operator simply slips pipe into open side and tightens down jaws.

Full overlapping upper and lower jaws. Jaw construction permits working close to face of vise; jaws are easily replaced. Malleable iron frame; long, oversize handles.

Packed in individual cartons.

No.	Each	Lgth. Jaws In.	Cap. In.	Ship. Wt. Lb.
00	$2.85	2 1/4	1/8–1 1/2 Incl.	6 3/4
0	3.60	2 1/2	1/8–2 1/2 Incl.	12
3	8.40	3 1/4	1/8–4 1/2 Incl.	27

Beaver Square-End Sawing Vises

No. 2

This tool is a combination vise and saw guide for cutting square ends on thin wall brass and copper tubing.

Will not mar nor crush tubing. Made with renewable steel inserts.

For use with hack saw; 32-point blades recommended.

Made of malleable iron.

No.	2	4
Each	$6.50	15.00
For Tubing....in.	1/8 to 2	1 1/2 to 4
Shipping Weight....lb.	5	25

Williams' Vulcan Drop-Forged Chain Pipe Vises

An unbreakable vise made entirely of wrought steel with drop-forged jaws, base and handle. Jaws are saw tempered for file sharpening. Serviceable upon and suitable for fastening to bench or post.

Standard finish, jaws have bright face around panel.

Packed in individual boxes; 6 of size Nos. 1 and 2 in a carton.

No.	Complete Each	Jaws per Pr.	Chain with Screw Each	Screw Each	Handle with Nut Each	Nut Each	Capacity Pipe Inches	Approx. Size Folded Inches	Approx. Wt. Lb.
1	$7.00	$3.00	$2.50	$.80	$2.20	$1.40	*1/8–2	4x 5x 6	4
2	15.00	7.00	4.80	1.40	4.20	2.70	1/4–4	6x 8x 8	10
3	27.00	12.00	9.00	2.50	7.00	4.00	1/2–6	8x 9x11	18
4	36.00	18.00	12.00	2.50	7.00	4.00	1/2–8	8x10x12	30

*Will grip pipe fittings not larger in diam. than 2 1/2-in. pipe.

Williams' Vulcan Superior Chain Pipe Vises

Drop-Forged Reversible Jaws

Handle is on top where it is easy to operate. Jaws are reversible—unscrew bolts and turn jaws over when teeth wear. Wrought steel.

Shot-blasted finish, orange panel in jaw.

No.	Each	Jaws per Pr.	Chain Each	Screw Each	Hdle. & Screw Each	Chain Arm Each	For Pipe Size Inches	Wt. Lb.
11	$10.00	$3.30	$2.00	$1.00	$2.35	$1.20	1/8–2 1/2	7
12	19.00	7.70	3.60	1.45	3.50	1.85	1/4–4 1/2	15

Handy Andy Vise Stands

A compact, rigid stand that can be instantly placed or moved. Made to accommodate without drilling all standard hinged or chain vises up to 2 1/2-inch capacity, also for bending pipe. Legs automatically lock when in use and fold together when carried from place to place. No separate parts.

Height, 36 inches. Weight, 32 pounds.

Stand without Vise.....each **$18.00**
With Hinged Vise.....each **23.00**

No. V-1 Williams' Vulcan 3-in-1 Vise Stands

This stand combines all the advantages of the chain pipe vise with a firm and rigid, portable stand.

For pipe size, ⅛ inch to 2 inches.

Base.—High grade malleable iron; heavily reinforced under the aprons to prevent distortion in severe service.

Pipe Bender.—Handles pipe up to ¾ inch.

Legs.—Are of 1-inch pipe, with upset feet, punched for fastening to floor, if desired.

Jaw.—Tool steel, carefully hardened and tempered—grips along its entire length.

Chain, Nut and Handle.—Of tough wrought steel.

No. V-1 Stand, Complete, Wt., 35 Lbs	each	**$31.00**
Jaw Only	each	**3.20**
Chain with Screw	each	**2.50**
Chain Screw Only	each	**.80**
Handle with Nut	each	**2.20**
Handle Only	each	**1.50**
Nut Only	each	**1.40**

Martin Vise Stands and Pipe Benders

With Hinged Vise

This apparatus is designed for use wherever pipe must be cut, threaded or bent. It can be picked up at any time and moved from place to place. There are no bolts, screws or braces to remove. It does not have to be fastened to the floor, walls or ceiling. It will not tilt, upset or skid.

It is convenient for cutting and threading pipe. For these operations, the pipe is fastened in the vise and rests in the bending attachment which keeps it rigid and in line.

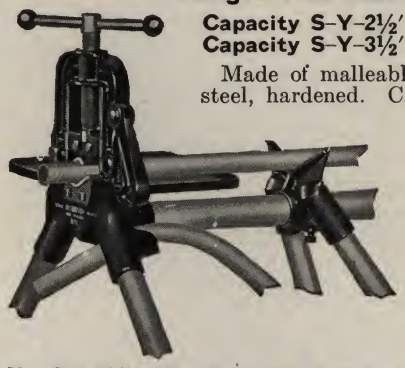
Equipped with a special device which will bend pipe from ⅛ to ¾-inch diameter easily without kinking. Capacity, with chain vise, 2-inch pipe; with hinged vise, 2½-inch pipe.

Weight complete, with hinged vise, 54 pounds; with chain vise, 50 pounds.

Cat. No.	Description	Each
1A	Complete with Hinged Vise	**$39.00**
1B	Stand with Hinged Vise, Less Legs	**35.00**
*1C	Stand with Legs, Less Vise	**31.00**
*1D	Stand Less Legs, Less Vise	**27.00**
1E	Complete with Chain Vise	**39.00**
1F	Stand with Chain Vise, Less Legs	**35.00**
†1G	Stand with Legs, Less Vise	**31.00**
†1H	Stand Less Legs, Less Vise	**27.00**

*Drilled for hinged vise. †Drilled for chain vise.

Ridgid Vise Stands

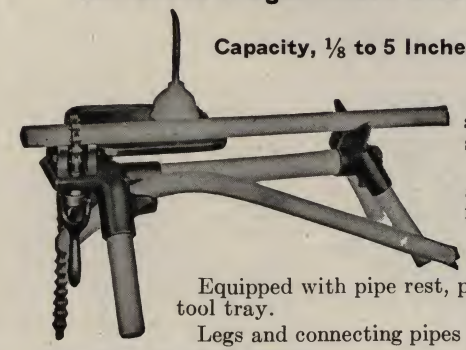


Capacity S–Y–2½", ⅛ to 2½ Inches
Capacity S–Y–3½", ⅛ to 3½ Inches

Made of malleable with jaws of tool steel, hardened. Can be carried easily from place to place as with 4-foot legs it weighs only 50 pounds. Tray for holding oil can, dope pot and tools. Equipped with pipe bender, 1-inch capacity. Legs and connecting pipe not furnished.

No. S-Y-2½", Ship. Wt., 23½ Pounds	each	**$9.51**
No. S-Y-3½", Ship. Wt., 28 Pounds	each	**11.41**

No. S-C-5 Ridgid Chain Vise Stands



Capacity, ⅛ to 5 Inches

Handy portable chain vise stand.

Sturdy malleable metal frame.

High quality tool steel jaws.

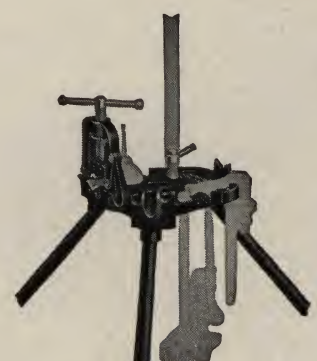
Equipped with pipe rest, pipe bender, and tool tray.

Legs and connecting pipes not furnished.

Shipping weight, 22 pounds.

No. S-C-5	each	**$11.88**

Ridgid Pipe Vise Tri-Stands



Yoke Type

A wide, roomy stand for dope pot, oil can, and tools; balanced to prevent tipping. Has special rim and slots for hanging tools; adjustable ceiling brace.

Pipe rest, three benders that will not collapse pipe. Legs furnished hinged at tray so they fold in and chain for easy carrying; screw-down feet.

Special malleable metal frame; tool steel jaws, scientifically hardened for firm grip and long wear.

		Yoke Type Capacity, ⅛"–2½"	Chain Type Capacity, ¼"–4"
No.		TSY-2½	TSC-4
Complete	each	**$13.76**	**$15.48**
Base	each	**9.68**	**9.68**
Chain Screw	each	....	**.70**
Chain Screw Handle	each	....	**.36**
Chain Screw Nut	each	....	**.70**
Top or Bottom Screw Assembly	each	**1.17**	....
Yoke and Hook Assembly	each	**1.47**	....
Clamps (2)	per pair	**.36**	....
Upper Jaw	each	**.50**	....
Lower Jaw	each	**.78**	**2.08**
Jaw Bolts	per set	**.12**	**.06**
Link Chain	each	....	**3.27**
Jack Screw Assembly	each	**.92**	**.92**
Shipping Weight, Complete	pounds	48	45

No. 0 Toledo Handy Stand

With No. 0 Toledo Open-Side Pipe Vise

This is a small compact, but efficient portable vise stand and work bench designed to be used with the No. 0 Toledo open side pipe vise, capacity ⅛ to 2½ inches inclusive; and when furnished with tool tray, provides an 8x9½-inch shelf fitted with holes for hanging pipe wrenches, threading tools, pipe cutters. It can also be furnished with a pipe bender to be bolted to rear of the bench for bending one inch or smaller sizes of pipe or conduit easily, and will not kink the pipe on short bends.

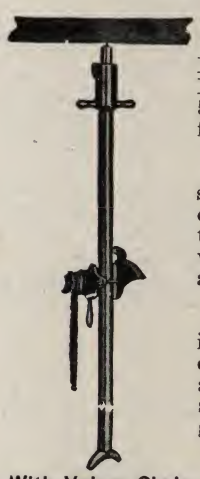
The handy stand is furnished with the front vise casting and the rear pipe support casting with the necessary U-bolts.

The legs should be approximately 42 inches long of 1-inch pipe, and the connecting brace 20 to 24 inches long of 1¼-inch pipe. Pieces of pipe for legs and connecting brace are not furnished.

Shipping weight complete, 37 pounds.

No. 0, Handy Stand Only	each	$4.00
No. 0, Handy Stand with Tool Tray	each	4.80
No. 0, Handy Stand with Tool Tray and Pipe Bender	each	5.80
No. 0, Open-Side Pipe Vise	each	3.60
No. 0, Handy Stand with Tool Tray, Pipe Bender, and No. 0 Pipe Vise	each	9.40

Penn Portable Pipe Vise and Bender Posts

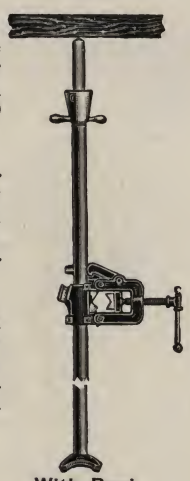


With Vulcan Chain Pipe Vise

The Penn Portable Pipe Vise and Bender Post is adjustable from 5 feet 4 inches to 9 feet 6 inches.

It can be erected instantly in a doorway or anywhere between the ceiling and floor, without causing damage.

Being easily moved it can be placed within easy reach and one can always have the assurance of perfect rigidity.



With Reed Pipe Vise

With Vulcan Chain Pipe Vise and Bender

No.	Capacity Vise Pipe, In	Bender Holding Pipe, In.	Shipping Weight Pounds	Price Each
*1	⅛ to 2	¾	30	$23.50
*2	⅛ " 4	1¼	60	32.80

With Reed Pipe Vise and Bender

1	⅛ to 2	¾	30	$23.75
2	⅛ " 3½	1¼	60	33.80

*No. 1 is equipped with No. 1 Vulcan chain pipe vise; No. 2 with No. 2 Vulcan chain pipe vise.

Toledo Portable Work Benches

No. 5 is for vise to hold up to 4½-inch pipe. Bored for Toledo pipe vises, Williams Vulcan Chain Vises Nos. 2 and 3, Reed Vises Nos. 71 and 73, and others with corresponding bolt holes.

No. 4 is for vise to hold up to 2-inch pipe. Bored for Toledo No. 1, Reed No. 71, Crane No. 1, Williams No. 1 and Armstrong No. 0 vises and others with same bolt holes.

Made of steel and malleable iron; legs are held by malleable castings and U-bolts and kept from spreading by steel tie rods. Adjustable pipe rest provides support. Special drilling or any length table top furnished on request.

No.		5	4
Each		$12.00	10.20
Table Top	inches	25x10	18x7
Shipping Weight	pounds	75	39

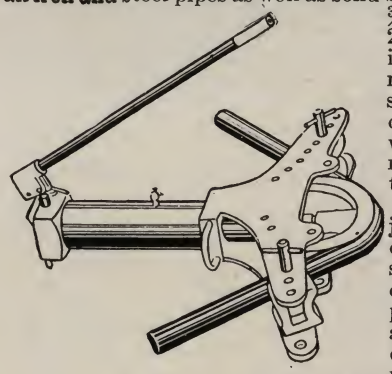
Skinner Pipe Benders

Designed to bend pipe or rods at true angles.
No. 3 bolts to wall or side of bench.

No.		1	2	3
Each		$6.50	12.00	6.50
For Pipe	inches	⅛ to 1¼	1¼ to 2	⅛ to 1¼
Weight	pounds	17	50	20

Tal's Prestal Hydraulic Portable Pipe Benders

Will bend with ease, without heating and without filling, all iron and steel pipes as well as solid bars of mild steel from ⅜ to 2 inches in the 2-inch model or to 3 inches in the 3-inch model. Produces smooth bends, without kinks, without wrinkles, and with a minimum of distortion.



Adaptable to any job with quick change-over to various pipe sizes. Quick release device removes the pipe instantly. Motor attachments for machines for production run.

2-Inch Model

Furnished with seven bending formers, sizes; ⅜, ½, ¾, 1, 1¼, 1½ and 2-inch; one flatter and extension piston. Approximate shipping weight, 170 pounds.

Each		$178.50
½ Hp., A.C., Motor Attachment	each	113.50

3-Inch Model

Furnished with nine bending formers, sizes; ⅜, ½, ¾, 1, 1¼, 1½, 2, 2½ and 3-inch; one flatter and extension piston. Approximate shipping weight, 260 pounds.

Each		$246.00
½ Hp., A.C., Motor Attachment	each	119.50

Conduit Formers

Special set for bending conduit: 1, 1¼, 1½ and 2-inch. (The 2½ and 3-inch standard formers are the same for conduit).

Set of Four	$32.60

This set of four conduit bending formers supplied instead of corresponding standard bending formers, no extra cost.

Skinner Boss Adjustable Hickeys

For bending pipe, conduit and rods. Without adjustment it will bend ⅛ to 1-inch pipe or conduit.

The snug support of the 6-inch disc prevents flattening or kinking. It guides the pipe from the start and with its rolling motion shapes to the desired bend.

The natural pull of the handle fits hickey to pipe or conduit with a positive grip which prevents slipping.

When used with pipe standard handle socket forms swivel.

Made of malleable iron. Enameled to resist rust.
Weight, 10 pounds.

Each..... $6.50

No. 790 Greenlee Hydraulic Pipe Pushers

For underground installation in gas, electric, water-works, telephone and other fields.

By utilizing hydraulic pressure for the power, it has been possible to make this tool very compact. It is readily portable, and one man can easily exert the maximum pressure on the pipe clamp. There are 8 speeds available for varying soil conditions, and these give pressures ranging from 6500 to 40000 pounds.

The power unit operates on a notched steel base, so that the pipe clamp is changed only every 4 to 7 feet, depending on length of base used. When the pipe has been pushed forward 4 inches a pawl on the body drops into a notch to hold it while the pressure is released by depressing the handles. Springs within the body rapidly return the pistons until their pawl drops into a new notch. This is repeated until the end of the base is reached, when the machine is pushed to the opposite end and the pipe clamp is reset.

Capacity 1¼ to 4-Inch pipe, inclusive. Net weight, pusher only, 160 pounds; shipping weight, with 8½-foot base and complete set of clamps, 480 pounds.

No. 790 Power Unit Only.....each $185.00

Steel Bases, with Pipe Support and Backing Plate

Length.....feet	5½	6½	7½	8½
Each.....	$30.00	35.00	40.00	45.00
Length Push.....feet	4	5	6	7

Quick Acting Clamps

Pipe Size...in.	1¼	1½	2	2½	3	3½	4
Each.....	$10.00	10.75	11.50	12.75	15.00	17.50	22.50

No. 1237 Millers Falls Hack Saw Frames

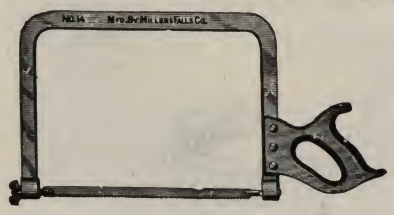
Designed so as to give the perfect balance throughout. Has a pistol grip handle. The end opposite the handle is built close to the frame, which facilitates working in close corners. The back is reinforced to withstand great strain. Blade, which is faceable in four directions, is strained by thumb nut under handle where it does not interfere with stroke.

Handle—black composition. Frame—nickel-plated. One 10-inch blade furnished with each frame.

Size Inches	Depth Inches	Capacity Inches	Weight Pounds	Each
3/16x1 1/16	3¼	8-12	1¾	$1.30

Millers Falls Hack Saw Frames

Capacity 12-Inch Blade



A deep heavy frame for sawing steel rails, girders and other large work. Handle of beechwood, shaped to give firm grip.

Nos. 14 and 14½ polished and nickel-plated. No. 24 enameled black.

No.....	14	14½	24
Each.....	$4.60	4.30	3.00
Depth.....inches	10¼	7¼	10¼
Stock.....inches	1x¼	1x¼	1x¼
Number in Box.....	1	1	1
Weight.....pounds	3⅝	3	3⅝

No. 9 Atkins Special Interchangeable Compass Saws

Designed specially for use by electricians and plumbers. Blade is made from silver steel and is extra heavy and stiff.

Has carved beech handle with a tightening bolt and wing nut that fits in a hole, so that the blade will not pull out of the handle.

Packed 6 in a box.

Length.....inches	10	12	14	16
No. 9.....per dozen	$13.90	14.15	14.85	....
Blades Only.....per dozen	6.85	7.05	7.75	....
Weight per Dozen.....pounds	5	6	7	8

Misener Single Cut Rotary Hack Saws

Type B—Used with a Bit Brace
Type P—Driven by an Electric Drill

Used by the electrician, plumber, steam fitter, garage, service station and factory.

Type P

Cuts clean, finished round holes in steel, sheet metals, cast iron, slate, wood, plaster, bakelite and any other material that a hacksaw will cut.

All tools are equipped with semi-high speed blades 1-inch in depth. Blades are available in depths ranging from 1 to 2¾ inches.

Cuts made are ¼ inch less in depth as ¼ inch is taken up by the body of the tool.

Coarse tooth blades for wood when specified.

Size In.	Each	Iron Pipe Size In.	Pipe Tap Size In.	Size In.	Each	Iron Pipe Size In.	Pipe Tap Size In.	Size In.	Each	Iron Pipe Size In.	Pipe Tap Size In.
¾	$1.65	⅜	½	2	$2.20	1½	...	3⅜	$2.80	...	.
⅞	1.70	½	¾	2⅛	2.45	...	...	3½	2.80	3	.
1	1.75	...	...	2¼	2.45	...	2	3¾	3.30	...	.
1⅛	1.75	¾	1	2⅜	2.45	2	...	4	4.50	...	.
1¼	1.85	...	...	2½	2.70	...	...	4⅛	4.50	3½	.
1 5/16	1.85	...	...	2⅝	2.70	...	2½	4¼	5.00	...	.
1⅜	1.85	1	...	2¾	2.70	...	...	4½	5.50	...	.
1½	1.85	...	1¼	2⅞	2.70	...	...	4⅝	5.50	4	.
1⅝	1.85	...	...	3	2.80	2½	...	4¾	6.00	...	.
1¾	1.95	1¼	1½	3⅛	2.80	...	.	5	6.50	...	.
1⅞	2.20	...	...	3¼	2.80	...	3	...	....	...	.

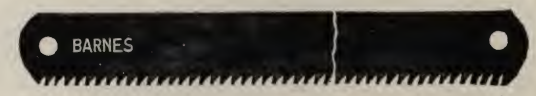
1-In. Deep Replacement Blades

Size....in.	¾ to 1½	1⅝ to 2¼	2⅜ to 2⅞	3 to 3½	3¾ to 5
Each.....	$.40	.40	.50	.60	.70

No. 100 Bit Brace Shanks for 3¾ to 5 In. Tools...ea. $1.50
No. 102 7/16-In. Round Straight Power Shanks for 3¾ to 5 Inch Tools.....each 1.75
No. 101 Bit Brace Shanks for ¾ to 3½-In. Tools.each .75
No. 103, ⅜-Inch Round Straight Power Shanks for ¾ to 3½-Inch Tools.....each .75

Barnes Standard Hand Hack Saw Blades

Milled Teeth—Accurately Set



All Hard

Wavy set is standard on all 24 and 32-tooth hand blades. Packed ½ gross in a box.

Lgth. In.	Width In.	Thickness Inches	No. of Teeth 14	18	24	32	Wt. Lb. per Gross	Per Gross
10	½	.025	.....	H1018	H1024	H1032	4¾	$10.00
12	½	.025	H1214	H1218	H1224	H1232	5¾	12.00

Flexible

Wavy set is standard on all 24 and 32-tooth hand blades. Packed ½ gross in a box.

Lgth. In.	Width In.	Thickness Inches	No. of Teeth 14	18	24	32	Wt. Lb. per Gross	Per Gross
10	½	.025	.....	F1018	F1024	F1032	4¾	$10.00
12	½	.025	F1214	F1218	F1224	F1232	5¾	12.00

Barnes Red Arrow High Speed Steel Power Hack Saw Blades

Packed 1 dozen in a box.

Lgth. In.	Width In.	Thickness In.	Number Teeth per Inch 4	6	10	14	18	Weight Pounds per Gross	Per Gross
12	⅝	.032	.....	.....	.....	R122314	R122318	10	$108.00
12	1	.049	.....	.....	.....	R124414	.....	26½	172.80
12	1	.065	.....	.....	R124610	.....	.....	35	172.80
14	1	.049	.....	.....	.....	R144414	.....	30½	201.60
14	1	.065	.....	.....	R144610	.....	.....	40½	201.60
14	1¼	.065	R14564	R14566	R145610	.....	.....	50	252.00
17	1	.049	.....	.....	.....	R174414	.....	37	244.80
17	1	.065	.....	.....	R174610	.....	.....	48	244.80
17	1¼	.065	R17564	R17566	R175610	.....	.....	61½	306.00
18	1	.065	.....	.....	R184610	.....	.....	50½	259.20
18	1¼	.065	R18564	R18566	R185610	.....	.....	64	324.00
18	1½	.072	R18674	R18676	.....	.....	.....	85	427.68
21	2	.072	R21874	R21876	.....	.....	.....	134	665.28
24	2	.072	R24874	R24876	.....	.....	.....	159	760.32
24	2	.100	R24804	.....	.....	.....	.....	213	1036.80

Special Bulletins

It is impossible to list in complete detail all lines of standard material, but we will gladly furnish special catalogs, bulletins and prices upon request, covering lines not fully described nor shown in this catalog.

Barnes Red Arrow Molybdenum Hand Blades

Lgth. In.	Width In.	Thickness In.	No. of Teeth 14	18	24	32	Wt. Lb. per Gross	Per Gross
10	½	.025	.....	R1018	R1024	R1032	5	$40.00
12	½	.025	R1214	R1218	R1224	R1232	6½	48.00

Barnes Service Molybdenum Hack Saw Blades

Power Sizes

Packed 1 dozen in a box.

All 14, 17 and 18-inch blades measure 13½, 16½, and 17½ inches from center to center of holes; all other sizes measure actual length from center to center of holes.

Lgth. In.	Width In.	Thickness In.	Number Teeth per Inch 4	6	10	14	Weight Pounds per Gross	Per Gross
12	⅝	.032	S122314	S122318	.....	.....	9¾	$120.96
12	1	.049	.....	.....	.....	S124414	25	120.96
12	1	.065	.....	.....	S124610	.....	31¾	141.12
14	1	.049	.....	.....	.....	S144414	27½	141.12
14	1	.065	.....	.....	S144610	.....	35½	176.40
14	1¼	.065	S14564	S14566	S145610	.....	47	171.36
17	1	.049	.....	.....	.....	S174414	35	171.36
17	1	.065	.....	.....	S174610	.....	44½	214.20
17	1¼	.065	S17564	S17566	S175610	.....	56	181.44
18	1	.065	.....	.....	S184610	.....	47	226.80
18	1¼	.065	S18564	S18566	S185610	.....	61	299.52
18	1½	.072	S18674	S18676	.....	.....	78	465.12
21	2	.072	S21874	S21876	.....	.....	140	532.80
24	2	.072	S24874	S24876	.....	.....	146	725.76
24	2	.100	S24804	.....	.....	.....	198	.....

Recommended Teeth and Speeds For Barnes Hack Saw Blades

Hand Blades

Material	Teeth per In.	Strokes per In.
Aluminum	14	60
Brass	14	60
†Brass Tubing	24	60
Bronze	14	60
Cast Iron	14	60
Drill Rods:		
No. 30 and Smaller	32	60
No. 30 to ¼ Inch	24	60
Drill Rod over ¼ Inch	18	40
†Flush Pipe	32	60
Heavy Angles	14	60
†Heavy BX	24	60
High Carbon Steel:		
¼ Inch and Under	24	60
Over ¼ Inch	18	60
High Speed Steels	18	40
†Iron Pipe	24	60
†Light BX	32	60
†Light Tubing	32	60
Light Angle Steel	18	60
Machinery Steel:		
¼ Inch and Under	24	60
¼ to 1 Inch	18	60
1 Inch and Up	14	60
†Metal Conduit	24	60
†Sheet Metal	32	60
Small Solid Sections	18	60
Soft Steel	14	60
Steel Rails	14	60

Power Blades

Material	Red Arrow and Service Teeth per In.	Speed per In.
Aluminum	4–6	120
Babbitt	4–6	120
Brass Castings:		
Soft	4–6	120
Hard	6–10	120
Bronze Castings	4–6–10	90
Cast Iron	6–10	90–120
Copper Tubing	10	90
Copper Bar	4–6	90
*Carbon Tool Steel	6–10	90–120
*Die Blocks	4–6	60–90
*Drill Rod	10	90–120
*Forging Stock:		
Mild	4–6	90–120
Alloy	4–6	90
*Machinery:		
Steel	4–6–10	90–120
*Malleable Iron	6–10	90
Manganese Bronze	6–10	60–90
Monel Metal	6–10	60–90
*Nickel Alloy	6–10	60–90
Pipe	6–10	120
*Rails	6–10	60–90
*Stainless	6–10	60–90
*Structural	6–10	90–120

*Use cutting compound.

†Coarser teeth may be used on thin sections if Barnes "600" Blades are used.

Grinding Wheels

Manufacturing Processes

Regular

Grinding wheels are manufactured by processes known as vitrified, silicate, shellac (or elastic), resinoid and rubber. These processes differ essentially in the bonds used to unite the abrasive grains into hard wheel masses.

Most grinding can be done best with vitrified wheels although there are special cases where other types are preferable. Probably 80 per cent of the grinding wheels used are made by the vitrified process.

Bonds

Vitrified Bonded Wheels

The vitrified bonded wheels are standard for most grinding operations, the other types being used only when special conditions are involved.

Silicate Bonded Wheels

Silicate wheels have a milder or less harsh grinding action and are especially adapted to that class of work requiring a delicate edge, such as edged tools and cutlery.

Shellac Bonded Wheels

Shellac bonded wheels are capable of producing a high degree of finish, and very thin wheels can be made by this process. The elasticity or non-rigidity of the bond is an especially desirable quality in some classes of work, notably in saw sharpening and in the grinding of granite and marble.

Resinoid Bonded Wheels

Resinoid snagging wheels operating at 9000 surface feet per minute are being employed very successfully for high speed snagging of steel and malleable castings and for billet and ingot grinding. Resinoid cutting-off wheels have now become a very important factor in cutting-off all kinds of materials.

Rubber Bonded Wheels

This type is used when the nature of the work requires a thin wheel of great strength, as in the grinding of grooves. Thick rubber wheels are also used for grinding of malleable iron and steel castings. They are operated at a speed considerably higher than that employed for vitrified wheels.

Different Types of Abrasives

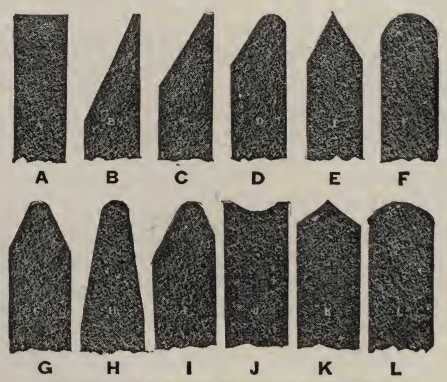
There are two distinct types of abrasives used, varying widely in physical formation and characteristics. One type is most efficient for grinding steel and materials of high tensile strength while the other type is adapted for cast iron, brass, bronze, granite, marble and other materials of low tensile strength.

Directions for Ordering

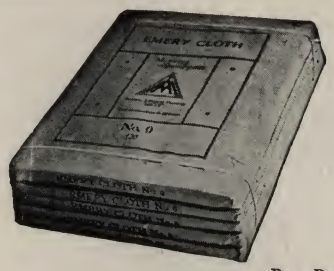
Give diameter and size of shaft. Give shape of face. If no shape is specified, Face A will be furnished. Specify the kind of cutting to be done, whether cast iron, malleable, hard or soft steel, brass or other work. Give speed of spindle, and state whether for wet or dry grinding.

If a wheel giving satisfactory service has been used, attach the tag showing grain and grade to order, and it will then be possible to duplicate it.

Wheels with any of the standard shapes of wheel edges, except A, are subject to an extra price.



Shapes of Faces for Straight Side Wheels



Emery Cloth

In Sheets—9x11 Inches

This emery cloth combines great flexibility with strong adhesion of the grain.

It is made on blue jeans backing, and is made flexible for hand use.

Per Ream — Grit Nos.							
3/0-0	½	1	1½	2	2½	3	Asstd.
$30.00	$31.20	$32.75	$34.30	$36.50	$39.40	$42.50	$33.25

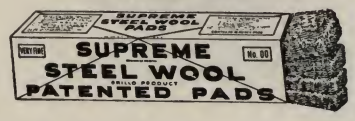
Crocus Cloth

Crocus cloth is excellent for metal polishing operations. It is made in only one degree of fineness.

Per Ream..... $30.00

Supreme Steel Wool

Patented Pads



Constructed to give greatest economy, usefulness and best form. Overcomes pulling apart of the wool, requiring gloves, avoids waste in taking unreasonable quantities.

Size of pads, 4½x4½ inches by 1 inch thick.

Packed 16 pads to the package.

No. **000**, Finest.....per package ....
No. **00**, Very Fine.....per package ....
No. **0**, Fine.....per package ....
No. **1**, Standard.....per package ....
No. **2**, Medium.....per package ....
No. **3**, Coarse.....per package ....

Lutz File Handles

No.....	1	2	3	4	5
Per Dozen.....	$.90	1.00	1.20	1.40	1.60
Length.....in.	4	4½	4⅞	5½	6
Diameter.....in.	1	1 3/16	1 5/16	1 7/16	1 9/16
For Files.....in.	3 to 6	6 to 8	8 to 12	12 to 16	16 to 20

Mill Files

Single cut and tapered slightly in width and thickness for about a third of their length. Usually made with two square edges.

Lgth. In.	Approx. Size Inches	Bastard Per Doz.	2nd Cut Per Doz.	Smooth Per Doz.	No. in Box	Weight Pounds per Doz.
4	7/16 x 5/64	$3.00	$3.50	.....	12	3/8
5	½ x 3/32	3.20	.....	.....	12	11/16
6	⅝ x 7/64	3.50	4.00	$4.50	12	1 3/16
7	11/16 x ⅛	3.90	.....	.....	12	1 15/16
8	13/16 x 5/32	4.30	4.90	5.40	12	2 11/16
10	1 x 3/16	5.60	6.40	7.00	12	5¼
12	1 3/16 x 7/32	7.50	8.60	9.40	6	9 1/16
14	1 11/32 x ¼	10.70	12.20	13.10	6	13⅛
16	1 17/32 x 9/32	14.70	.....	.....	6	20⅝

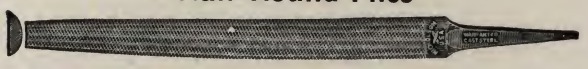
Lgth. In.	Bastard — 1 Round Edge — Per Dozen	Wt., Lb. per Doz.	2 Round Edges — Per Dozen	Wt., Lb. per Doz.	No. in Box
6	$3.90	1⅛	$4.40	1⅛	12
8	4.80	2⅝	5.40	2 9/16	12
10	6.30	5¼	7.00	5	12
12	8.40	8 15/16	....	...	6

Flat Files

Sizes 4 to 8-inch, 12 in box; 10-inch and larger, 6 in box.

Bastard				
Length.....inches	4	6	8	10
Per Dozen.....	$3.70	4.30	5.30	7.00
Length.....inches	12	14	16	18
Per Dozen.....	$9.70	13.30	17.80	23.90
Second Cut				
Length.....inches	4	6	8	10
Per Dozen.....	$4.30	4.80	6.10	8.10
Length.....inches	12	14	16	18
Per Dozen.....	$11.00	15.30	20.10	26.80
Smooth				
Length.....inches	4	6	8	10
Per Dozen.....	$4.70	5.30	6.60	8.70
Length.....inches	12	14	16	18
Per Dozen.....	$12.10	16.70	22.30	29.20

Half-Round Files



Sizes 4 to 8-inch, 12 in box; 10-inch and larger, 6 in box.

Bastard				
Length.....inches	4	6	8	10
Per Doz.....	$4.80	6.10	7.50	9.10
Length.....inches	12	14	16	..
Per Doz.....	$11.80	15.50	20.60	.....
Second Cut				
Length.....inches	4	6	8	10
Per Doz.....	$5.60	6.70	8.30	10.10
Length.....inches	12	14	16	.....
Per Doz.....	$13.00	17.00	22.50	.....
Smooth				
Length.....inches	4	6	8	10
Per Doz.....	$6.10	7.10	8.90	10.70
Length.....inches	12	14	16	.....
Per Doz.....	$13.90	18.30	24.20	.....

Round Files

Tapered slightly toward the point. Bastard cut files 6 inches and longer are double cut. Second cut files 12 inches and longer are double cut. All others single cut. Round Blunt files are made in Bastard cut only.

Lgth. In.	Approx. Width Inches	Round Bastard Per Doz.	Round 2nd Cut Per Doz.	Round Smooth Per Doz.	Weight Pounds per Doz.	Round Blunt Bastard Per Doz.	Round Blunt Bastard Wt., Lb. per Doz.	No. in Box
4	5/32	$3.00	$3.50	$3.90	1/4	.....	...	12
5	3/16	3.20	3:80	4.10	7/16	.....	...	12
6	7/32	3.50	4.00	4.50	3/4	.....	...	12
7	1/4	3.90	4.60	4.90	1 3/16	.....	...	12
8	5/16	4.30	4.90	5.40	1 3/4	$5.60	2 1/16	12
10	3/8	5.60	6.40	7.00	3 1/4	7.50	3 5/8	12
12	1/2	7.50	8.60	9.40	6 3/4	10.70	8 3/8	6
14	5/8	10.70	12.20	13.10	12	.....	...	6
16	3/4	14.70	16.80	17.90	19 1/2	.....	...	6

Three Square Files

Sizes 6 to 10-inch, 12 in box.

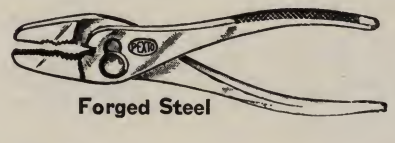
Bastard			
Length.....inches	6	8	10
Per Dozen.....	$6.10	7.50	9.10
Second Cut			
Length.....inches	6	8	10
Per Dozen.....	$6.70	8.30	10.10
Smooth			
Length.....inches	6	8	10
Per Dozen.....	$7.10	8.90	10.70

Combination Pliers

Nickel-plated finish.

No.	Length In.	Each
6	6 3/4	$.35
8	8	.50
10	10	.70

No. 10 Pexto Thin Nose Combination Pliers

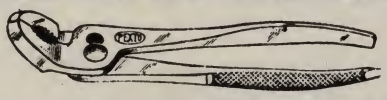


Forged Steel

Has wire cutter, knurled handles, combination slip joint. Length, 6 1/2 inches. Packed one in box.

No. 10.....per dozen $6.38

No. 8 Pexto Bent Nose Combination Pliers



Slip-joint. Knurled handles. Nickel-plated finish. Packed 1 in a box.

No. 8, Lgth., 8 In., Wt. Doz., 8 3/4 Lbs.....per doz. $12.00

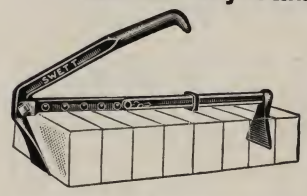
Pexto Tinners' Hand Snips

Straight Pattern—Left Hand Cut

Laid blade; forged steel. Blued handles, polished heads. No. 12 is not steel laid. Packed 1 in a box.

No.....	7	8	9	10	12
Each.....	$4.20	3.70	3.10	2.80	1.90
Cuts Stainless, Gage No.....	22	22	24	24	..
Cuts Mild, Gage No..	19	19	20	20	28
Length Cut....inches	4	3 1/2	3	2 1/2	2
Length Overall.inches	14 1/2	13 1/2	12 1/2	11 1/2	8 1/2
Weight.....pounds	3	2 1/2	1 3/4	1 1/2	5/8

No. 489 Adjustable Brick Clamps



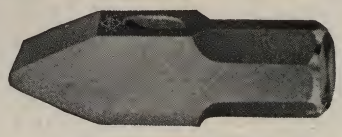
For handling 8 to 12 bricks. Made of malleable iron. Clamp insures secure hold and quick operation.

Size No.....	1	2
No. 489....ea.	$2.30	3.00
Type.....	Standard	Heavy
Weight.....lb.	5	6

Use the Telephone and Save Time

We are organized to give special service on telephone orders.

No. 199 Single Face Engineers' Hammers

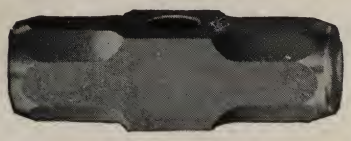


Weight.....pounds	1½	2	2½	3	4
No. 199.....each	$.55	.55	.65	.80	.95

No. 200 Double Face Engineers' Hammers

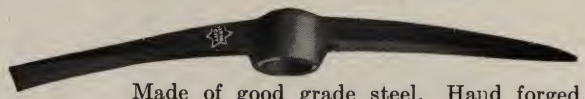
Weight Pounds	Each
1½	$.55
2	.55
2½	.65
3	.80
4	.95

No. 325 Blacksmiths' Double Face Sledges



Weight Pounds	Each	Weight Pounds	Each
5	$1.10	14	$2.15
6	1.15	16	2.50
8	1.35	18	2.90
10	1.60	20	3.15
12	1.90	24	3.85

No. 296 Railroad or Clay Picks



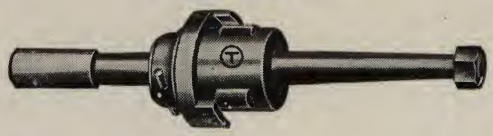
Made of good grade steel. Hand forged, black natural finish. Furnished in straight weights.

Packed 2 dozen in a case.

Weight.....pounds	5	6	7	8	9	10
Per Dozen.....	$11.20	11.80	12.20	14.00	15.80	17.10

Oswego Standard Roller Tube Expanders

Dudgeon Pattern



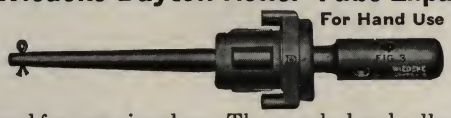
This expander has a solid body, thus avoiding constant breaking of cap screws. One expander will answer for any thickness of tube sheet.

Furnished with round head mandrel for hand use. Square head mandrels can be supplied on order.

Diam. Inches	Each	Extra Mandrels Each	Extra Rolls Set of 3	Range of Expansion Inches	Weight Pounds
1	$10.00	$1.00	$.50	25/32 to 15/16	1⅛
1¼	10.00	1.50	.60	1 1/32 to 1 7/32	1⅜
1⅜	10.00	2.00	.70	1 3/16 to 1⅜	1⅞
1½	10.00	2.00	.70	1¼ to 1½	2
1⅝	10.00	2.00	.80	1 7/16 to 1⅝	2⅞
1¾	10.00	2.00	.80	1½ to 1¾	2⅞
1⅞	10.00	2.50	.90	1⅝ to 1⅞	3⅝
2	10.00	2.50	1.00	1¾ to 2	4 3/16
2⅛	12.00	3.00	1.15	1⅞ to 2⅛	5 7/16
2¼	12.00	3.00	1.15	2 to 2¼	5¾
2½	14.00	3.50	1.30	2 7/32 to 2½	6⅞
2¾	16.00	3.50	1.45	2 15/32 to 2¾	8¼
3	18.00	4.00	1.60	2 11/16 to 3	9⅞
3¼	20.00	4.50	1.75	2⅞ to 3¼	12⅜
3½	23.00	5.00	2.00	3⅛ to 3½	14⅛
3¾	25.00	5.75	2.25	3⅜ to 3¾	17
4	27.00	6.50	2.50	3⅝ to 4	20
4¼	35.00	8.00	3.50	3⅞ to 4¼	23
4½	40.00	8.00	3.50	4⅛ to 4½	27
5	50.00	10.00	4.00	4½ to 5	40
6	60.00	15.00	5.00	5½ to 6	56

No. 3 Wiedeke Dayton Roller Tube Expanders

For Hand Use



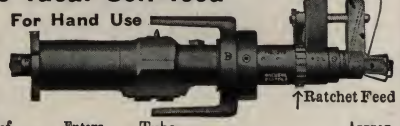
Designed for occasional use. The mandrel and rolls are tool steel and hardened. The frame and rear collar is one piece, impossible to lose collar. Guard can be removed.

When Ordering select largest size expander that enters your I. D. tubes, see list.

Size of Expander for O.D. Tubes, In.	Enters I.D. Tubes and Expands to Inches	Expander Complete Each	Extra Mandrels Each	Extra Rolls Each	Approx. Ship. Wt. Expander Lbs.
1	25/32 to 29/32	$10.00	$2.00	$.20	2
1¼	1 to 1 5/32	10.00	2.00	.20	2
1½	1 7/32 to 1 7/16	10.00	2.00	.20	2
1¾	1½ to 1¾	10.00	2.00	.20	4
2	1 23/32 to 2	10.00	2.00	.20	6
2¼	1 15/16 to 2¼	12.00	2.00	.20	6
2½	2 5/32 to 2½	14.00	2.50	.20	8
2¾	2 13/32 to 2¾	16.00	3.25	.35	9
3	2⅝ to 3	18.00	3.75	.35	11
3¼	2⅞ to 3¼	20.00	4.25	.50	14
3½	3⅛ to 3½	23.00	4.75	.50	16
4	3 9/16 to 4	27.00	5.75	.60	21

No. 375 Wiedeke Ideal Self-feed Tube Cutters

For Hand Use



Cuts off new or old tubes uniformly with a flare or bevel ready to bead or weld. Avoids cracking tubes.

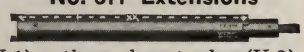
V-1

V-2

Size of Tube Cutter for O.D. Tubes, In.	Enters and Cuts Tubes I.D. Inches	Tube Cutter Complete Each	Extra Cutters Each	Extra Cutters Per Doz.	Approx. Ship. Wt. Tube Cutter Lbs.
2	1 23/32	$30.00	$.80	$4.80	18
2¼	1 31/32	32.00	.80	4.80	19
2½	2 7/32	34.00	.80	4.80	20
2¾	2 15/32	36.00	.80	4.80	22
3	2 11/16	44.00	.80	4.80	29
3¼	2⅞	46.00	.80	4.80	30
3½	3⅛	48.00	.80	4.80	32
4	3⅝	50.00	.80	4.80	33
4½	4 1/16	80.00	1.60	9.60	51
5½	4 15/16	95.00	2.00	12.00	55

Connect Extension to reach in smoke box (V-1) or through water leg (V-2).

No. 377 Extensions



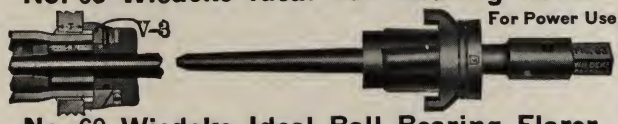
No. **D-1½** fits tube cutters 2" to 2¾", length 19", wt. 9 lbs. **$8.00**

No. **E-1½** fits tube cutters 3" to 4", length 19", wt. 12 lbs. **8.00**

Other lengths quoted upon request, give distance at XX.

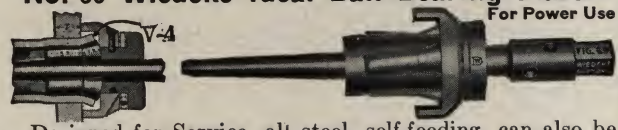
No. 63 Wiedeke Ideal Ball Bearing Roller

For Power Use



No. 69 Wiedeke Ideal Ball Bearing Flarer

For Power Use



Designed for Service, all steel, self-feeding, can also be used by hand. Rolls cannot fall out of frame. No. 63 sets and rolls tube uniformly for bead in one operation, see V-3. No. 69 rolls and flares tube in one operation, see V-4.

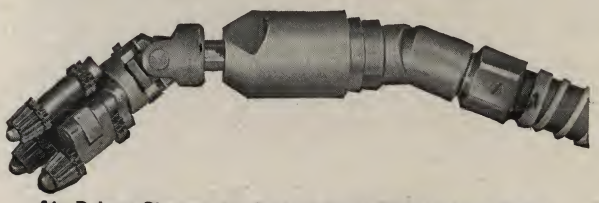
When Ordering select largest expanders that enter your I.D. tubes, see list.

Size of Expander for O.D. Tubes, In.	Enters I.D. Tubes and Expands to Inches	Expander Complete No. 63 No. 69 Each	Extra Mandrels Each	Extra Straight Roll 63-R Each	Extra Combination Roll 69-R Complete	Approx. Ship. Wt. Expander Lbs.
1⅝	1⅜ to 1⅝	$16.00	$3.50	$.30	$2.00	7
1¾	1½ to 1¾	16.00	3.50	.30	2.00	7
1⅞	1 39/64 to 1⅞	16.00	3.50	.30	2.00	7
2	1 23/32 to 2	16.00	3.50	.30	2.00	8
2⅛	1 13/16 to 2⅛	18.00	3.50	.30	2.20	8
2¼	1 15/16 to 2¼	18.00	3.50	.30	2.40	9
2½	2 5/32 to 2½	19.50	4.50	.30	2.60	12
3	2⅝ to 3	22.00	5.50	.60	3.00	19
3¼	2⅞ to 3¼	24.50	5.50	.70	3.20	22
3½	3⅛ to 3½	24.50	6.50	.70	3.60	23
4	3 9/16 to 4	27.00	7.50	.80	4.00	27

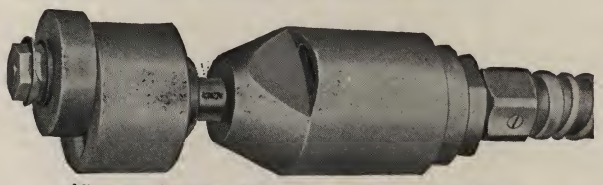
Elliott-Lagonda Boiler Tube Cleaners

Air, Steam and Water Driven

Air or Steam Driven Cleaner for Straight Water Tubes Equipped with Type PN Cutter Head



Air-Driven Cleaner for Curved Boiler Tubes Using Quick Repair Type Cutter Head and Universal Coupling, and Flexible Coupling on Rear of Motor



Vibrator Cleaner, Air or Steam Driven, for Use in Removing Scale from the Outside of Fire-Tubes

Elliott-Lagonda Tube Cleaners are built for cleaning all sizes and types of boiler tubes, straight or curved. Air or steam driven cleaners are the most powerful and satisfactory type and should be operated at pressures of 80 to 100 lb. Water-driven cleaners should be operated at 150 lb. pressure. All cleaners are well-built for heavy duty service and to stand up under hard usage.

Suitable types of cutter heads are available for removing scale of any character. Heads are designed for quick disassembly to renew cutters, which are hard, and tough. Drill heads are also furnished.

In Cleaning Curved Tubes, a universal joint is used between motor and cutter head or drill, and the FH flexible coupling between motor and hose.

For Fire-Tubes, an air or steam driven motor is equipped with a special vibrator or knocker head which sets up localized vibration which effectively knocks scale off the outside of the tubes.

Special wire-wound hose for operating tube cleaners is furnished in 25 and 50 ft. lengths, including couplings to fit all types of tube cleaners.

In requesting information about cleaners, specify: 1), inside diameter of tubes; 2), radius of shortest bend; 3), method of operation (air, steam, or water); 4), pressure available; and 5), also make of boiler.

Further Information and Prices on Application

Chesterton Robinson Automatic Tube Cleaners

The head of the cleaner opens when pressed against the boiler tube, permitting the steam to enter in full or diminished force, as desired by the operator, and closes automatically when removed, thus saving steam and the disagreeable flying back of soot.

No.	1	2	3
For Tubes.....inches	1½ to 2½	2½ to 4	4 to 4½
Size of Steam Hose.inches	¾	1	1
Price, without Hose..each	$15.00	18.00	23.00

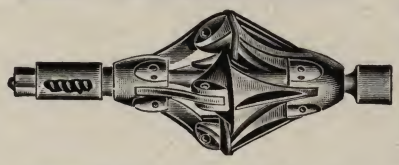
Chesterton Engineers' Favorite Tube Cleaners

Sizes 1¾ to 4½ in. outside diameter of tube.

Per Inch **$1.00** Minimum Price.....each **$2.00**

Chesterton Ingalls Flue Cleaners

Made of steel and malleable iron.



Size In.	Each	Size In.	Each
1¾	$2.00	3	$3.00
2	2.00	3¼	3.25
2¼	2.25	3½	3.50
2½	2.50	3¾	3.75
2¾	2.75	4	4.00

Chesterton Combination Ingalls Tube Scrapers and Brushes

Made entirely of steel and malleable iron.

A labor saver, two tools in one.

With the wire brush attached, will leave the tubes as clean as when new.

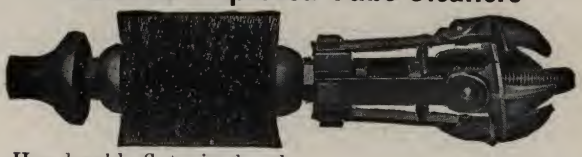
The brush can be renewed in case the scraper outlasts it.

Made in the following sizes: 1¾, 2, 2¼, 2½, 2¾, 3, 3¼, 3½, 3¾ and 4 inches.

Minimum Price.....each **$2.50**

Price.....per inch **1.25**

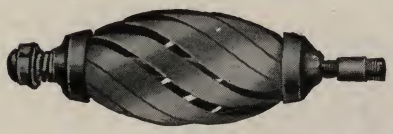
Favorite Improved Tube Cleaners



Has durable flat wire brush.

1¾" to 4½"..per inch **$1.25** 1¾".....each **$2.50**

Chesterton Elliptical Flue Cleaners



Has steel cutting arms that thoroughly remove all scale and soot. Sizes less than 2-inch take 2-inch price.

Sizes 1 to 6 Inches.....per inch **$1.00**

Chesterton Condenser Tube Brushes

Made of flat, stiff, durable wire. Nipple on end, ⅛-inch.

O.D.....inches	½	⅝	¾	⅞	1
Per Dozen.....	$12.00	12.00	12.00	12.00	12.00

Chesterton Spiral Tube Brushes

For marine or stationary boilers. Made of flat, stiff, durable wire. Diameters 1 to 6 inches. Other sizes on order.

Diameters **1** to **2** Inches.....each **$2.00**

Diameters **2** to **6** Inches.....per inch **1.00**

Chesterton Coil Tube Cleaners

A brush and scraper combined. Made of coiled, tempered spring wire.

Available in sizes from 1 to 4 inches.

Sizes smaller than 2 inches are charged as 2-inch size.

Wrapped individually.

Per Inch Outside Diameter of Tube..... **$1.00**

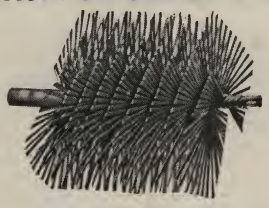
Chesterton Fine Wire Tube Brushes

Made of fine tempered steel wire. A good brush to be used in connection with a scraper, or in low pressure boilers. Sizes 1 to 6 inches.

Sizes less than 2 inches take 2 inch list.

Per Inch..... **$1.00**

No. 2 Chesterton Oval Wire Furnace Brushes



Made of flat steel wire.

Adapted for Arco Ideal boilers, Nos. 1, 2 and 3. Other sizes for Capitol, Continental and similar boilers.

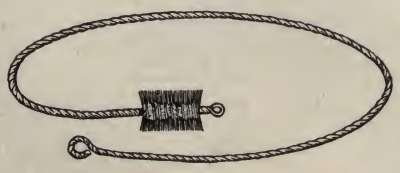
Size.....inches **2½x5**
No. 2 Std. Construction. ea. **$1.50**
Quality Construction. ea. **2.00**

No. 53 Worcester Ideal Heater Brushes

A durable brush for all flat surfaces as in Gurney Heaters, etc. The flat steel back makes it the strongest of the smaller types.

No.	Size Inches	Price Each	No.	Size Inches	Price Each
1	4x1½	$1.00	3	4½x2	$1.00
2	4x1¾	1.00	..	.....	....

Plumbers' Brushes



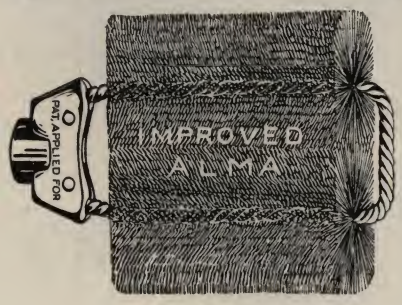
Made to fit ¾, ⅞, or 1-inch brass pipes.

Furnished with 15-foot flexible handle.

Price...each **$2.50**
Price, Extra Length Handle ....per ft. **.15**

No. 54 Worcester Improved Alma Heater Brushes

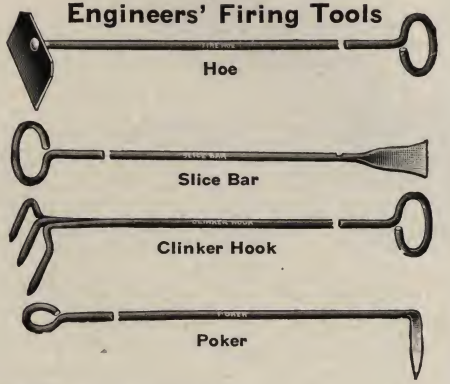
A heater brush with a grip fastener which holds brush in original shape and prevents loosening of wires. Adaptable to nearly all makes of heaters.



No.	Size Inches
1	4½x1¾
2	5 x2
3	6 x2½

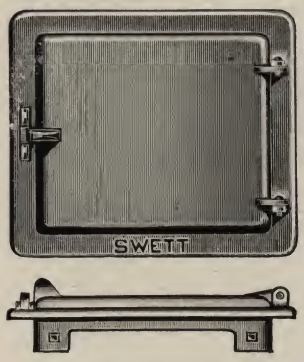
No.	Price Each
1	$1.25
2	1.25
3	1.25

Engineers' Firing Tools



In lengths 5, 6, 7, 8 and 9 feet.
Prices upon application.

No. 112 Swett Ash Pit or Flue Doors



Cleanout doors for use at bottom of chimney flues. Regularly open from left to right. Can, however, be inverted to open from right to left. Frames have lugs at top to hold in cement.

Chimney openings should be made about one inch larger than the actual size openings given in table.

Size In.	Per Dozen	Opening, In. Height	Opening, In. Weight	Overall, In. Width	Overall, In. Depth	Depth Frame In.	Wt., Lb. per Doz.
5x 7	$11.60	5	6⅞	7⅛	9⅛	1 9/16	54
6x 8	11.60	5⅞	7⅞	7⅞	9⅞	1⅜	72
7x 9	12.00	7	9	9	11	1⅜	84
8x 8	13.20	7¾	7¾	9½	9½	1⅜	88
8x10	14.40	7⅞	9¾	9¾	11⅝	1½	96
10x10	16.80	10	10	12½	12½	1½	108
10x12	18.00	10	12	12	13¾	1½	128
10x14	24.00	9¾	13¾	11¾	15¾	1½	140
12x12	28.80	12	12	14	14	1⅝	150
12x15	36.00	12	15	14	17	1⅝	175
12x16	39.60	12	15⅞	13⅞	18	1⅝	208
16x16	60.00	16	16	18	18	1¾	272
16x20	72.00	15¾	19¾	18¼	22	1¾	394
24x16	102.00	23½	15	28½	20	1½	642
24x24	192.00	24	24	28	28	2⅝	960

Doors or frames furnished separately without drilling at ½ above price.

No. W-111 Prest-O-Weld Welding Outfits

For All-Purpose Welding

Illustration Shows Typical Assemblies Including Blowpipes, Regulators, and Necessary Accessories

For production work and heavy or prolonged welding.

No. **W-111**, Outfit with No. W-111 Welding Blowpipe, No. 72 Wrench, No. R-109 Oxygen Regulator, No. R-103 Acetylene Regulator, 12½ Feet Each of ¼-Inch Acetylene and Oxygen Hose, Pair No. 16 Goggles and Instruction Manual.....each **$61.50**

Outfit Including Above with the Addition of Welding Heads, One Each of Nos. 3, 5, 7, 9 and 11; Two No. 3380 Oxygen and Two No. 3381 Acetylene Hose Connection Nuts; Four No. 4789 ¼-Inch Hose Connecton Nipples; Four No. 39Z13 ¼-Inch Hose Ferrules; Nos. 87 and 88 Wrenches; and Friction Lighter.....each **$81.00**

Less Acetylene Regulator.....each **60.40**

No. W-110 Prest-O-Weld Welding Outfits

For Automotive and Other Medium-Range Welding

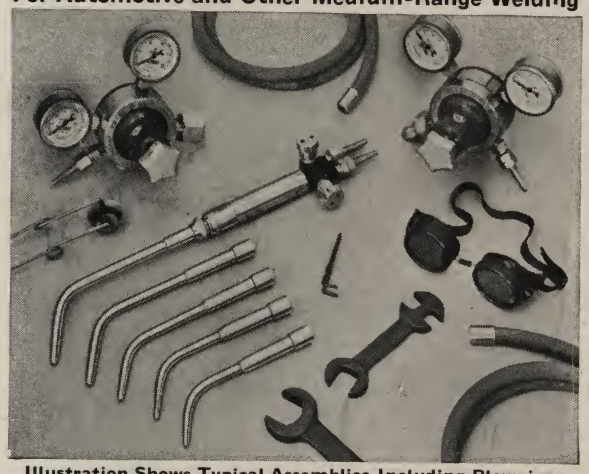


Illustration Shows Typical Assemblies Including Blowpipes, Regulators and Necessary Accessories

For welding metals from 32-gauge to ½-inch thick.

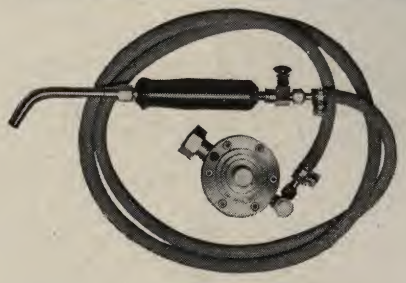
No. **W-110**, Outfit with No. W-110 Welding Blowpipe, No. 72 Wrench, No. R-110 Oxygen Regulator 3000-Lb. and 100-Lb. Gauges, No. R-111 Acetylene Regulator, 350-Lb. and 30-Lb. Gauges 12½ Feet Each of ¼-Inch Acetylene and Oxygen Hose, Pair No. 16 Goggles and Instruction Manual....each **$44.35**

Outfit Including Above with the Addition of Welding Heads, One Each of Nos. 1, 2, 4, 6 and 8; Two No. 3380 Oxygen and Two No. 3381 Acetylene Hose Connection Nuts; Four No. 4789 ¼-Inch and Two No. 32A12 3/16-Inch Hose Connection Nipples; Four No. 39Z13 ¼-Inch Hose Ferrules, No. 87 and No. 88 Wrenches and Friction Lighter.....each **$61.00**

Less Acetylene Regulator.....each **46.60**

No. **CW-110** Cutting Attachment Only.....each **15.75**

No. 0-6131 Prest-O-Lite No. 1 Plumbers' Outfits

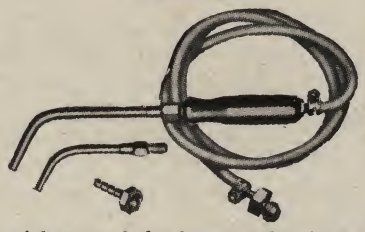


For sweating copper pipe and fittings, melting metal, thawing pipe and similar heating operations. The small, intense torch flame may be focused exactly where it is needed. Pressure regulator holds gas at uniform working pressure. Needle valve permits gas to be turned on or off at torch handle.

Outfit includes A-6133 torch with needle valve, 10-pound pressure regulator, 15 feet of ¼-inch acetylene hose and two hose clamps.

No. **0-6131**.....each **$8.50**

No. 0-6132 Prest-O-Lite No. 2 Plumbers' Outfits



Furnished with a torch for heavy soldering, brazing and heating, and an extra smaller stem, which increases the range of the outfit to light soldering, brazing and heating.

Outfit includes A6105 torch; A-6089 stem and mixer assembly; A-3879 union for B tank; A-3881 union for MC tank; 15 feet of ¼-inch acetylene hose and two hose clamps.

No. **0-6132**.....each **$5.00**

No. 0-6343 Prest-O-Lite 4-In-1 Outfits

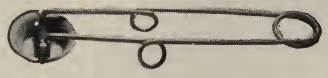
This outfit includes complete equipment for all open-flame soldering, brazing and heating purposes. Used by plumbers for soldering copper pipe and fittings, melting metal and thawing pipes.

The complete outfit includes A-6058 torch handle and stem and mixer assemblies as follows: 07R05 for very fine soldering; A-6086 for light soldering; A-6083 for medium soldering, and A-6089 for heavy soldering and heating. It also includes unions for B and MC tank; 6 feet of ¼-inch acetylene hose and wrench; 2 hose clamps; waterproof carrying case.

No. **0-6343** 4-In-1 Outfit.....each **$6.50**

No. **A-6342** 4-In-1 Outfit Case Only.....each **.50**

Oxweld Friction Lighters



This lighter saves time and the bother with matches. Movable file increases life of lighter several times.

Each..... **$.30**

Large Renewal Tips (Box of 6)..... **.50**

No. O-6109 Prest-O-Lite 5-In-1 Outfits

This 5-in-1 outfit combines five torch utility in one compact unit. The soldering copper is useful for light to medium tin work.

The soldering flame is entirely enclosed, eliminating the possibility of burning adjacent materials. It heats quickly and keeps an even temperature.

An individual mixer for each stem automatically maintains the right mixture of acetylene and air. The handle is made of non-heat-conducting material.

Outfit includes No. A-6058 torch handle and stem and mixer assemblies as follows: No. 07R05 for very fine soldering: No. A-6086 for light soldering: No. A-6083 for medium soldering; No A-6089 for heavy soldering; No. 10R87 soldering copper and stem; unions for B and MC tank; 6 feet of ¼-inch acetylene hose and wrench and two hose clamps.

Outfit is packed in a durable metal case with snap lock.

No. **0-6109** Complete.....each **$9.00**
No. **09R76** 5-In-1 Outfit Metal Case Only.....each **1.50**

Prest-O-Lite Small Gas Tanks

Style B Style MC

Prest-O-Lite Gas Tanks are steel cylinders charged with pure, dry acetylene which is ready for instant use at the turn of a valve.

These small tanks contain no free acetylene. They are packed with a porous filler, which is saturated with a liquid chemical, capable of absorbing many times its own volume of acetylene. The acetylene in the tank is dissolved in this liquid solvent and remains in solution until the valve is opened, which permits the acetylene to be drawn off.

The flow of acetylene is controlled by a key-operated valve and can be turned on and off with the same convenience as city gas. A gauge indicates what portion of the gas supply remains.

Prest-O-Lite Gas is freeze-proof, and can be used in any kind of weather, both indoors and out.

The empty tanks can be exchanged at any Prest-O-Lite Gas Exchange Service Station for full tanks, by paying for the gas only.

Style		B	MC
*Tank	each	**$12.50**	**6.50**
*Exchange	each	**$2.75**	**1.10**
Length	inches	20	13½
Diameter	inches	6	4
Rated Capacity	cubic feet	40	10
Average Weight	pounds	30	10

*Tank price includes tank, initial charge of gas and tank key. Exchange price is for gas only.

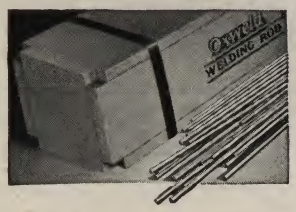
Oxweld Welders' Goggles

Has lightweight plastic composition eyecups.

Flat-ground and polished lenses; diameter, 50 mm. Available with light-green, medium green, and dark-green lenses.

No. **16** Goggles	per pr.	**$1.90**
No. **17** Coverall Goggles, Fit Over Eyeglasses	per pr.	**2.50**
"AA" Lenses; Light, Medium or Dark Green	per pr.	**1.05**
Cover Glasses	per pr.	**.20**
Head Band for No. 16 Goggles	each	**.15**
Chain Bridge for No. 16 Goggles	each	**.15**
Lens Retaining Rings for No. 16 Goggles	per pr.	**.25**
Fiber Washers (Used Between Lenses)	per pr.	**.05**

Oxweld Welding Rods



Oxweld Rods are of recognized high quality. Each rod is made for a specific use and its quality and uniformity are constantly checked by chemical, physical, metallurgical and field tests.

No. 25M Patented Bronze Rods

For high strength, wear resisting welds in copper, brass, and for bronze welding malleable iron, steel, and cast iron.
Length, 36 inches.
In 1/16, 3/32, ⅛, 3/16, ¼, and ⅜-inch diameters.

No. 26 Everdur Bronze Rods

For Everdur plate, sheet, and castings.
Length, 36 inches. In ⅛, 3/16, and ¼-inch diameters.

No. 11 Drawn Manganese Bronze Rods

For cast iron, brass, bronze, etc.
Length, 36 inches. In ⅛, 3/16, and ¼-inch diameters.

Tobin Bronze Rods

For cast iron, bronze, brass, etc.
Length, 36 inches. In ⅛, 3/16, and ¼-inch diameters.

No. 19 Cupro Rods

For rail bonding and metal furniture manufacture.
Length, 36 inches. In ⅛ and 3/16-inch diameters.

No. 1 H. T. (High Test) Patented Steel Rods

For high strength welds in steel plates, sheets, structural shapes, pipe, steel castings, etc.
Length, 36 inches. In 1/16, ⅛, 3/16, ¼, 5/16, and ⅜-inch diameters.

No. 7 Drawn Iron Rods

For steel plates, sheets, structural shapes, pipe, etc.
Copper-coated.
Length, 36 inches. In 1/16, 3/32, ⅛, 3/16, and ¼-inch diameters.

No. 9 Cast Iron Rods

For gray iron castings.

Diameter	inches	3/16	¼	5/16	⅜
Length	inches	12–18	21–24	21–24	21–24

No. 23 Aluminum Rods

For cast and sheet aluminum and aluminum alloys.
Length, 36 inches. In 1/16, ⅛, and ¼-inch diameters.

No. 14 Drawn Aluminum Rods

For sheet aluminum.
Length, 36 inches. In ⅛ and ¼-inch diameters.

No. 15 Lynite Aluminum Rods

For aluminum castings.
Length, 36 inches. In 3/16 and ¼-inch diameters.

Insto-Gas Torches and Furnaces

For all types of soldering and maintenance work. Precision built of the finest materials, designed for safety and satisfactory operation under all working conditions.

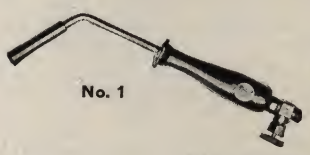
Adaptable for special applications and is now being used by manufacturers of equipment who require nation-wide refill service on bottled gas.

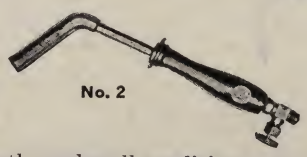
Approved by Underwriters' Laboratories and Factory Mutuals Laboratories.

Safety features: no handling of inflammable liquids; non-explosive from concussion; chemically stable; safety excess-flow check in cylinder; diaphragm type cylinder valves; positive closing spring relief valve; no monoxide gas or other noxious fumes; and non-toxic.

While general maintenance work covers a large variety of uses, the following uses are the most popular: removing bearing metal, preheating bearing blocks, melting babbitt, thawing frozen pipes, relining vats and tanks, laboratory work, paint removing, etc. In addition to these and other everyday uses there are often special applications, such as branding, heating mastic for laying wood flooring, that may require special Insto-Gas equipment.

Torches


No. 1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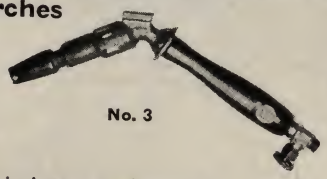
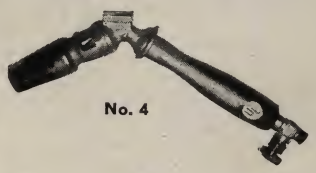

No. 3


No. 4

Lights instantly under all conditions; no priming or preheating.
Clean flame; no grease, no soot, no smoke.
Controlled volume; steady flame, no pumping.
Handles all copper pipe fittings up to 8 inches and temperatures up to 2700°F.
All six sizes of Insto-Gas torches are equipped with regulating valve on the torch handle which affords a positive control of the size of the flame.

No. 1, Small Pencil Flame Type

Suitable for small electrical soldering, sheet metal soldering, and laboratory work.

Produces a small, pointed hard flame adjustable from ¾ inch long, ⅛ inch diameter to 5 inches long, ½ inch diameter.

Weight, ⅞ pound.

No. 1 ..... each **$16.80**

No. 1-A Lead Welding Torch

This special torch has same size burner as the No. 1 but is gooseneck shaped and has small composition handle for finger tip control. Always produces the non-oxidizing flame necessary for lead welding.

Weight, 9 ounces.

No. 1-A ..... each **$16.80**

No. 2, Small Blow Torch Type

Suitable for electrical soldering, sheet metal soldering, copper pipe fittings up to 1½ inches, and solder flowing on auto fender and body repair work.

Produces a narrow brush type blast flame, ranging from 3 inches long, ⅜ inch diameter to 8 inches long, ⅝ inch diameter.

Weight, 1 3/16 pounds.

No. 2 ..... each **$18.80**

No. 3, Medium Size Blow Torch Type

Suitable for all general blow torch uses, larger electrical soldering, refrigerator work, light brazing, etc.

Produces a hard blast flame adjustable from 3 inches long, ⅝ inch diameter to 6 inches long, 1 inch diameter.

Weight, 1¾ pounds.

No. 3 ..... each **$14.52**

No. 4, Large Blow Torch Type

Suitable for large electrical soldering, solder wiping, copper pipe fittings up to 8 inches, heavy sheet metal soldering, general paint removing, melting out soil pipes, preheating, annealing, rebabbitting, etc.

Ranges from soft lapping flame 5 inches long, 1 inch diameter to large, hard blast flame 12 inches long, and 2 inches in diameter.

Weight, 1 13/16 pounds.

No. 4 ..... each **$14.52**

No. 5, Super Torch

Suitable for skin drying molds, core patching, heating chill plates, preheating, annealing, crisping paint on brick or stone, thawing frozen pipes, removing rims from generators and general maintenance work. Produces a broad flame from 6 inches to 24 inches in length. Weight, 3 pounds.

No. 5 ..... each **$16.00**

Furnaces

Lights easily, does not smoke or soot, and is ideal for use in enclosed areas.

When adjusted correctly, quickly melts lead, solder, babbitt, paraffin, asphalt and tar. Thirty pounds of lead can be melted in less than 6 minutes with a high flame, then the flame can be adjusted to hold the molten lead at any desired temperature.

The threaded base of the furnace attaches to the valve at the top of the cylinder. The cylinder valve controls the flow of gas so that the furnace flame is easily and accurately adjusted to provide the right temperature for the quick melting of various materials.

Complete furnace consists of a specially designed burner, a spider or grate for lead pots and pot guard.

The furnace on a No. 18 cylinder and with a 9-inch pot guard is 12 inches in diameter and 29½ inches high.

Weight of full cylinder and furnace, 53 pounds.

Furnace Assembly without Guard ..... each **$17.60**
Furnace Guard Only ..... each **2.75**

No. 18 Cylinders

No.		**18**
Lease Charge	each	**$22.00**
Fills and Refills	each	**6.00**
Height	inches	16
Diameter	inches	12
Gas Content	pounds	18
Gas Production	cu. ft.	150
Gas Production	Btu.	382,500
Weight	pounds	43

Hose

This hose is a special reinforced rubber tubing, tested up to 1500 pounds pressure per square inch.

Service Hose with Cylinder Connector

Length Hose	feet	**3**	**6¼**	**12½**	**25**	**50**
Complete	each	**$4.32**	**5.52**	**7.80**	**12.40**	**21.60**
Weight	pounds	1⅛	1½	2 3/16	3½	6 3/16

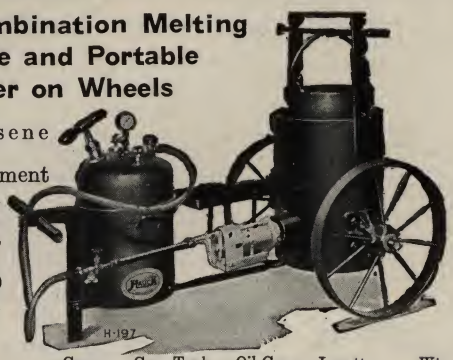
Extension Hose Assembly without Cylinder Connector

Length Hose	feet	**12½**	**25**	**50**
Complete	each	**$6.56**	**11.16**	**20.36**
Weight	pounds	1¾	3	5¾

Extension Hose Connector Union ..... each **$.92**

Tandem Cylinder Hose Assembly Complete with 3-Foot Hose and All Connectors ..... each **10.32**

Hauck Combination Melting Furnace and Portable Heater on Wheels



Burns kerosene and coal oil.

Burner equipment detachable. Melts 200 lbs. lead or babbitt in 10 minutes; 450 lbs. in 20 minutes; 850 lbs. in 35 minutes.

No.	Each	Cap. Pot, In.	Cap. Tank Gal.	Oil Consump., Gal.	Length Hose, Ft.	Wt. Lbs.
200	$130.00	200	10	1½	12	355
201	145.00	450	12	2	12	390
202	160.00	850	15	2	12	415

Lead Melting Furnaces

On Legs

On Wheels

These furnaces are made from boiler plate; wheels are fitted with wrought rims and wrought spokes.

No.	Style	Diameter Furnace Inches	Capacity Pot Pounds	Pot No.	Price Each
0	Legs	18	180	3	$49.00
1	Legs	24	360	4	67.00
2	Legs	30	500	5	84.00
7	Wheels	18	180	3	72.00
8	Wheels	24	360	4	90.00
9	Wheels	30	500	5	125.00

Can be furnished with pots of larger capacity if desired.

Heavy Cast Iron Melting Pots

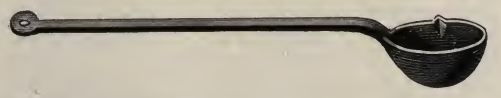
No.	Diameter Inches	Depth Inches	Capacity Pounds	Price Each
3	13½	7½	180	$10.00
4	13½	11	360	11.00
5	15	11	500	20.00

No. 398 Johnson Cast Iron Solder Pots

Size.....in.	4	5	6	7	8	9	10	*12	*13½
Each.....	...	...	...	....	....	....	....	....	....
Lead Cap...lb.	8½	16	24	40	70	90	120	200	240
Wt., Each..lb.	2¼	2¾	3½	5	8	14½	15½	29	30

*Furnished with pouring lip and lifting lug.

No. 373 Wrought Ladles



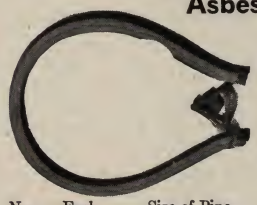
Steel bowls, handles welded on.

Single or double lipped as ordered. Price the same for either style.

Regular: Size In.	Per Dozen	Capacities Liquid Pts.	Capacities Lead Lbs.	Wt., Lbs. per Dozen	Extra Heavy: Size In.	Per Dozen	Capacities Liquid Pts.	Capacities Lead Lbs.	Wt., Lbs. per Dozen
2½	.....	*1½	1¼	6½	6	.....	1¼	14¼	49
3	.....	*2¾	2¼	8	7	.....	1⅔	21	88
3½	.....	†1	3	11½	8	.....	2½	27½	95
4	.....	†1¼	4¼	13	9	.....	3½	40	126
5	.....	⅔	10¼	31	10	.....	5	50	150
6	.....	1¼	14¼	37	..	.....	...	....	...

*Ounces. †Gills.

Asbestos Lead Joint Runners



An improved rope core made from wire inserted asbestos yarn, plaited square and covered with two double braided asbestos jackets to insure longer life and better service.

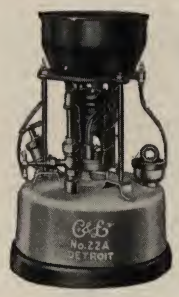
Complete with ferrules and malleable iron clamps.

No.	Each	Size of Pipe	Size of Runner	Ship Weight
1	$1.95	2", 3", 4"	¾" Sq. x 2' 4"	1 Lb. 2 Oz.
2	2.10	4", 5", 6"	¾" Sq. x 2' 8"	1 Lb. 4 Oz.
3	3.75	6", 8", 10"	1 " Sq. x 4' 0"	2 Lbs. 10 Oz.
4	4.80	10", 12", 14"	1 " Sq. x 5' 8"	3 Lbs. 1 Oz.
5	9.90	16", 18", 20"	1¼" Sq. x 7' 3"	4 Lbs. 10 Oz.
6	11.00	24"	1¼" Sq. x 8' 4"	5 Lbs. 3 Oz.
7	12.50	30"	1¼" Sq. x 10' 5"	6 Lbs. 13 Oz.
8	14.30	36"	1¼" Sq. x 12'11"	7 Lbs. 12 Oz.
9	15.80	40"	1¼" Sq. x 14' 6"	8 Lbs. 12 Oz.
10	16.80	48"	1¼" Sq. x 17' 5"	10 Lbs. 10 Oz.

No. 22A C&L Coil Fire Pots

Pump Type—1-Gallon Capacity

For Gasoline



The drawn steel tank is leak-proof and heavily coated with tin inside and out. This prevents rust that works up into the coil and burner.

Improved quick detachable coil unit and hinged door coil cup make is easy to clean and repair.

Pump is extra large and powerful, producing air pressure quickly.

Uprights and fittings are extra heavy.

Shipping weight, 13¾ pounds.

No. 22A.....each **$13.30**

No. 75 C & L Public Utility Fire Pots

1-Gallon Capacity

For Gasoline or Kerosene

Produces a large, powerful, hot blast flame. Quickly melts 75 pounds of solder, kettle of paraffin or insulating compound.

Solid, substantial construction throughout. Patented construction enables user to remove burner unit and insert new in 45 seconds.

Gives long service without cleaning. Furnished also with tinner's shield.

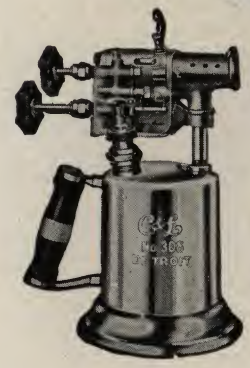
Kerosene may be used successfully by changing burner jet which will be supplied at no charge if desired and specified.

Shipping weight, 22½ pounds.

No. 75.....each **$23.80**

No. 308 C & L Quick Generating Torches

1-Quart Capacity
For Gasoline



Performs either indoors or outdoors. A windshield protects the gas generator during outdoor use.

The burner produces a hot blue blast flame which may be reduced to a small flame using upper valve needle for light work. The preheater may be used to keep the gas generator hot and ready for instant use at all times; the operator opening the main burner only when desiring the powerful blast flame.

Shipping weight, 5⅜ pounds.

No. **308**.....each **$10.10**

C & L Blow Torches

No. 32A, 1-Quart Capacity
No. 238, 1-Pint Capacity
For Gasoline

Performs perfectly either indoors or outdoors under severe weather conditions. Powerful burner of improved construction is fitted with wind shield and has self-cleaning, non-enlargeable gas orifice.

The quart size burner produces an intensely hot blue blast 7 inches long which may be regulated for lighter work. Pint size burner is smaller.

No.	32A	238
Each	$9.10	7.10
Capacity	1 Qt.	1 Pt.
Ship. Wt .....lbs.	5	4¼

No. 158A C&L Blow Torches

For Gasoline—Capacity, 1 Quart

For use in garage, farm, or home workshop.

Produces a good sized flame, is economical in fuel consumption and has a long burning life.

Burner is of extra high grade bronze and the sharp point, self-cleaning needle has a large shoulder to prevent orifice enlargement. Burner is protected by a windshield for use outdoors.

Tank strongly reinforced. Fills at the bottom fitted with automatic pump.

Shipping weight, 4¾ pounds.

No. **158A**.....each **$6.10**

No. 600A C&L Blow Torches

1-Quart Capacity—For Gasoline

Designed for the occasional user who wants a torch to use on odd jobs under ordinary weather conditions.

Tank is strongly reinforced. It has a concave bottom fitted with a filler plug.

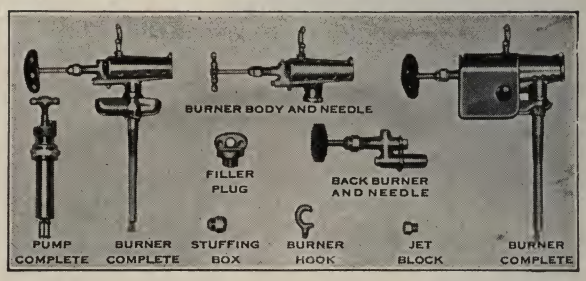
Control valve wheel is made of a heat resisting composition.

Pump is quick-acting. Leaks are prevented by the patented interlocking fittings.

Shipping weight, 4¾ pounds.

No. **600A**.....each **$5.10**

Repair Parts for C & L Torches

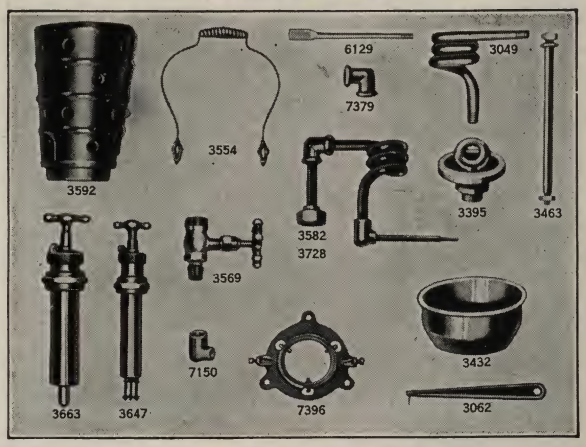


Torch No.	Burner Complete No.	Burner Complete Each	Back Burner & Needle No.	Back Burner & Needle Each	Filler Plug No.	Filler Plug Each	Pump Complete No.	Pump Complete Each
32-A	3607	$8.60	3607A	$5.00	3089	$.90	3756	$3.70
308	3604	11.15	3604A	7.00	3089	.90	3756	3.70
144-A	3695	7.70	3695A	4.15	3089	.90	3756	3.70
325	3662	12.00	.....	....	3089	.90	3663	5.00
225	3698	12.00	.....	....	3089	.90	3663	5.00
238	3713	7.70	3713A	5.00	3599	.90	3756	3.70
252	3714	7.70	3714A	5.00	3599	.90	3756	3.70
99	3731	7.70	3731A	5.00	3599	.90	3756	3.70
158-A	3700	5.15	*3700A	4.05	3089	.90	3757	3.70
160-A	3706	4.70	*3706A	4.05	3599	.90	3757	3.70
600-A	3701	4.70	*3701A	4.05	3089	.90	3756	3.70
700-A	3707	4.70	*3707A	4.05	3599	.90	3756	3.70
800	3752	3.90	3752A	3.20	....	...	3758	2.50

*Burner body and needle.

No. **3008**, Stuffing Box, Fits All Torches.....each **$.40**
No. **7172**, Burner Hook, Fits All Torches.....each **.25**
Cleaner Stem and Pin (Give Torch No.).....each **.40**
Jet Block (Give Torch No.).....each **.40**
Pump Cup Leather Washer (Give Torch No.)....each **.10**
Pump Check Valve Cork Seat (Give Torch No.)..each **.05**

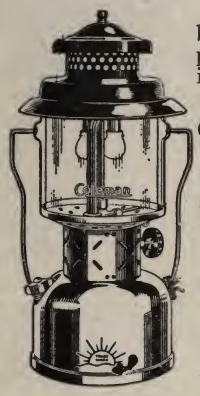
Repair Parts for C & L Nos. 22-A and 50-A Coil Fire Pots



No.	Description	Each	No.	Description	Each
3049	Coil with Wires.	**$1.70**	**3432**	Plumbers' Shield	**$1.50**
3582	Coil Unit for No. 22-A.....	**3.85**	**3663**	Pump Comp. (Large for No. 22-A)...	**5.00**
3728	Coil Unit for No. 50-A.....	**3.85**	**3755**	Pump Comp. (Small for No. 50-A)..	**3.70**
7379	Coil Conn. Ell..	**.50**	**7661**	Cup Leather Washer (Large Pump).....	**.10**
7150	Coil Burner Jet Ell.....	**.40**	**8037**	Cup Leather Washer (Small Pump).....	**.10**
6129	Burner Jet.....	**.40**	**6422**	Check Valve Cork Seat (Round)...	**.05**
3062	Jet Cleaner.....	**.30**	**6551**	Check Valve Cork Seat (Square)...	**.05**
3592	Coil Cup (Hinged Door).....	**1.00**			
7396	Top Plate.....	**1.50**			
3463	Upright with Nuts..	**.30**			
3554	Handle with Ears	**1.00**			
3569	Valve.....	**2.00**			
3395	Filler Plug.....	**1.50**			

No. 220B Coleman Instant-Lite Lanterns

Gasoline Type



Equipped with Roto-Type burner, built-in pump and hand-operated filler plug. Fitted with pyrex globe. Lantern is windproof, rainproof and insect proof.

The green porcelain enamel top is 6¾ inches in diameter.

Lacquer finish fount is 6 inches in diameter and holds two pints of fuel, enough for 10 to 12 hours of lighting.

Height over all, 14½ inches.

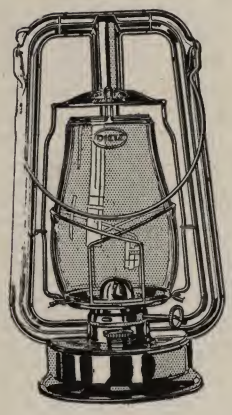
Packed 1 lantern in a carton, complete with 2 mantles and wrenches.

Shipping weight, 6 pounds.

No. 220B.....each **$7.95**

Dietz Hy-Lo Lanterns

Hot Blast—For Kerosene

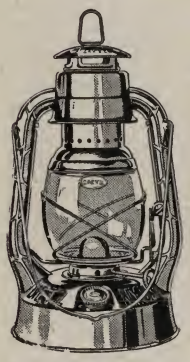


Simple globe-lift construction. Hot blast. Oil used, 150° kerosene. Fitted with Dietz Fitzall Loc-Nob globes. Bright tin finish.

Height Over All.....in.	13½
Complete with White Globe .....per doz.	**$15.00**
Complete with Solid Ruby, Blue or Green Globes .....per doz.	**17.50**
Volume of Light by Test .....c.p.	4
Size of Wick.....in.	⅝
Fount Capacity.....hrs.	30
Patented Steel Burner, No.	421

Dietz Streamline Little Wizard Lanterns

Cold Blast—Balanced Draft—For Kerosene



Fitted with Dietz Little Wizard Loc-Nob globe and specially braced lift-guide.

Has a new thru-tube bail attachment, including automatic support for holding bail upright, when desired.

Packed 12 in a package.

Height Over All.....in.	11½
With White Globe.....per doz.	**$16.00**
With Ruby, Blue, or Green Globe.....per doz.	**18.50**
Volume of Light by Test....cp.	6
Size of Wick.....in.	⅝
Fount Capacity.....hr.	30
Kerosene Capacity.....oz.	16
Lock Steel Burner No.....	211

Dietz Fitzall Loc-Nob Lantern Globes

Fits all Dietz lanterns that formerly required Blizzard cold blast or Fitzall No. 0 globes. It simplifies stock and adds the selling feature of Loc-Nob globe protection to various Dietz lanterns formerly without it.

It is now standard equipment on the following Dietz lanterns: Monarch, Hy-Lo, No. 2 Blizzard, Buckeye dash; also Dietz Mill, and Wall lanterns.

Height, 6 9/16 inches. Diameter bottom, 3 7/16 inches. Diameter top, 2 13/16 inches.

Three dozen in a case; shipping weight 36 pounds.

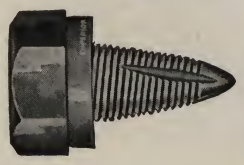
White.....per dozen	**$2.50**
Genuine Ruby, Blue or Green.....per dozen	**5.00**

Dietz Little Wizard Loc-Nob Lantern Globes

Will fit Little Wizard, Little Giant and Roadster Wagon lanterns. Height, 3 13/16 inches. Diameter top, 3¼ inches. Diameter bottom, 2 13/16 inches. Three dozen in a case; shipping weight, 24 pounds.

White.....per doz.	**$2.50**
Red, Blue or Green.....per doz.	**5.00**

Taper Tap Boiler Repair Plugs



Manufactured in 3 sizes, large, medium and small. They are packed, 1 dozen in a box, complete with fibre washers.

Small.....per dozen	**$3.00**
Medium.....per dozen	**3.75**
Large.....per dozen	**4.50**

Jiffy Boiler Plugs

Applied by a blow with a wrench or hammer; then a few quick turns of bolt head. The repaired spot will outlast the boiler.

One dozen mounted on display card, each card packed in separate carton.

⅜-Inch.....each **$.35**

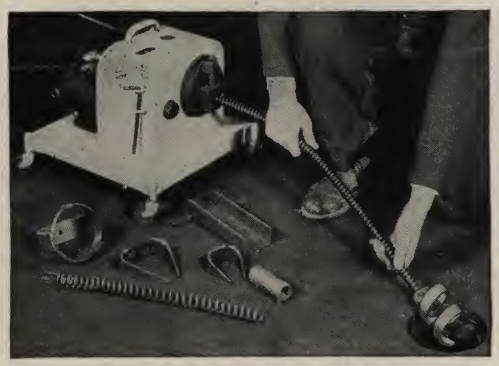
Schaul's Spearhead Boiler Repair Plugs

Bolt and head made of steel, hardened and rustproofed.

Rubber washer made of the best material, and will not be affected by heat. Threads will not strip, and head cannot rust or shear off. Each plug is a tool in itself.

Per Dozen..... **$3.00**

Oster Sewer Master



Cleans grease, roots, and other stoppage from the pipe.

Fabricated sheet steel case and base. Close grained, cast iron spindle. Spindle gear of steel forging. Alloy steel motor pinion and gears, running in ball bearings.

Universal, reversible motor with variable speed developing from ½ to 1½ hp. depending on load.

Standard equipment: Machine complete with motor and reversing snap switch; one, 50-foot length of flexible snake, ⅞-inch o.d., open wound, .207 inch thick, with two, ⅛-inch wire reinforcements capable of passing 4-inch 90° ells and 6-inch traps; one, 50-foot length of stiff snake, ⅞-inch o.d., open wound, .207 inch thick, with one, .193-inch wire reinforcement capable of passing 6-inch 90° ells; 1¼ inch auger, 18 inches long; U cutters, 2¼, 3½, and 5-inch sizes; saw augers, 3 and 5-inch sizes; snake coupling.

Each.....	
Height Overall.....inches	14
Width Overall.....inches	15
Length Overall.....inches	15
Spindle Speed Idle.....rpm.	140
Spindle Speed Under Full Load.....rpm.	100
Net Weight Complete with Motor.....pounds	85

Flexible Sewer Rods

Fig. 1

For removing roots, hard grease, rags, mud, sand, gravel, scale, tuberculation (rust), and other obstructions from sewers, gas pipes, down spouts, boiler flues, drainage tile, etc.

Rod is of fine high carbon steel. It is tempered to the right degree to assure maximum flexibility and great strength, yet soft enough to permit a permanent set to prevent breakage.

Special alloy steel couplings are heat treated to prevent assembly tools or pliers from chewing up the parts. Cadmium-plated for rust resistance.

To connect Flexible Couplings hold the hook end of the rod or tool to be connected at a 90° angle in relation to the coupling and insert hook into hexagon part of coupling, as shown in Fig. 1. Then screw up nut with fingers, using turning handle and assembly tool to make tight, as shown in Fig. 2.

Fig. 2

Rod and Frame

Coupling for No. 4 Set

Cross-Section of Coupling for No. 4 Set

No. 1 Plumbers' Sets—50 Feet

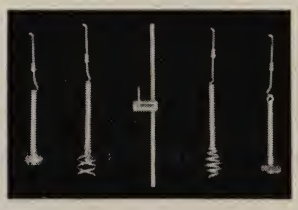
Recommended for 1½-inch pipe.

Made of 12-gage wire. Sections are 12½ feet long between couplings. No turning handle is furnished with this tool because tool may be turned with the frame.

Set consists of rod and frame, couplings, roller head, double worm head, and bulb head.

No. **1**, Complete.....each **$4.90**

No. 2 Plumbers' Sets—72 Feet



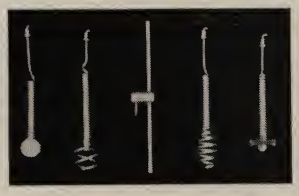
Recommended for 2 and 2½-inch pipe on straight runs, Ys, and 45° elbows.

Made of 9-gage wire. Sections are 6 feet long between couplings. Wire is turned into the line with the aid of the turning handle.

Set consists of rod and frame, couplings, roller head, double worm head, turning handle, bulb head, and 1⅜-inch wire brush.

No. **2**, Complete.....each **$14.75**

No. 3 Plumbers' Sets—102 Feet



Recommended for 2, 2½, and 3-inch pipe. Short 90° elbows (cast iron pipe) in 4-inch sizes can be worked with this tool.

Made of 6-gage wire. Sections are 6 feet long between couplings.

Set consists of rod and frame, couplings, roller head, double worm head, turning handle, bulb head, and 2-inch wire brush.

No. **3**, Complete.....each **$23.75**

No. 4 Plumbers' Sets—102 Feet

Root Puller

Root Cutter

Corkscrew for 4-Inch Pipe

Corkscrew for 2-Inch Pipe

Turning Handle

Spear Head

Made of 3-gage wire. Sections are 6 feet long between couplings.

Sets consist of rod and frame, couplings, root puller, root cutter, corkscrew for 4-inch pipe, corkscrew for 2-inch pipe, turning handle, spear head, and assembly tool.

No. **4**, Complete.each **$57.50**

*4-Inch Wire Brush

Assembly Tool

Extras

*No. **4** Wire Brush for 4-Inch Pipe.....each **$7.25**

6-Foot Coil Rod, 1 Inch O.D., for Attaching to No. 4 Set Only.....each **6.00**

Coiled Rod, 1 Inch O.D. (Made to Order Any Length Over 6 Feet).....per foot **1.25**

Root Puller (Close Coupled to Coiled Rod) Extra each **6.00**

Plumbers' Drain Pipe and Sewer Augers

The 3/16 and 1/4-inch coil spring sizes are adapted for sinks and lavatory drain pipes, and can be worked around small elbows. The 7/16 and 1/2-inch sizes are used on 2 to 4-inch drain pipes; 5/8 and 3/4-inch diameter springs are used on 4 to 6-inch drain pipes and sewers.

All sizes except 3/16-inch have bulb-shape boring gimlet on end to help in passing through elbows.

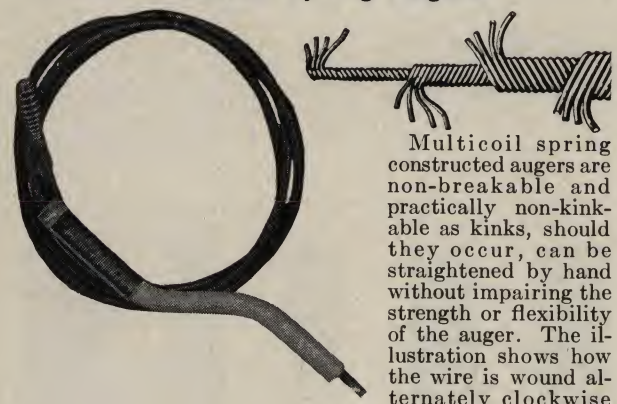
Tempered

Silver Brite galvanized finish on all diameters except 5/8 and 3/4-inch sizes.

No.	Diam. In.	Gage No.	8-Ft. Lgth. Each	10-Ft. Lgth. Each	15-Ft. Lgth. Each	25-Ft. Lgth. Each	50-Ft. Lgth. Each	100-Ft. Lgth. Each	Approx. Wt., Lb., 25 Ft.
*W	3/16	16	$.52	....	$.80	$1.20	.....	.....	2
†Q	1/4	14	1.00	$1.12	1.50	2.14	$3.80	.....	3½
†M	7/16	11	1.40	1.62	2.20	3.30	5.90	.....	7
†L	1/2	10	....	2.24	3.00	4.40	8.20	$15.10	9
‡F	5/8	8	....	....	....	5.50	11.00	22.00	16
‡T	3/4	7	....	....	....	9.00	18.00	36.00	20
Music Wire									
†P1	1/4	14	$1.54	$1.74	$2.30	$3.30	$5.90	.....	3½
†P2	7/16	13	....	2.50	3.40	5.00	9.00	$17.40	7
†P3	1/2	12	....	....	4.50	7.30	12.40	24.50	9

*With steel bushed wood adjustable slide handle.
†With patented adjustable hollow rotary crank handle.
‡With aluminum slide handle and crank handle.

Multicoil Spring Augers

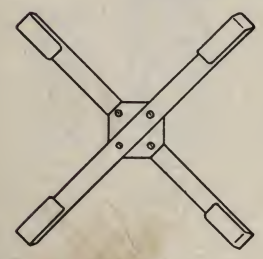


Multicoil spring constructed augers are non-breakable and practically non-kinkable as kinks, should they occur, can be straightened by hand without impairing the strength or flexibility of the auger. The illustration shows how the wire is wound alternately clockwise and counter clockwise. The 1/4-inch diameter is composed of 17 strands of highly tempered wire, 4 strands to each of 4 layers, with a wire through the center. The 3/8-inch diameter contains 21 strands, 4 strands to each of 5 layers, with a wire through the center.

Equipped with hollow rotary crank handle.

No.	Diam. Inches	15-Ft. Lgth., Ea.	25-Ft. Lgth., Ea.	50-Ft. Lgth., Ea.	100-Ft. Lgth., Ea.	Wt. Lbs. 25 Ft.
X1	1/4	$3.70	$6.10	$12.00	.....	5
X2	3/8	7.50	12.30	24.50	$49.00	8½

Flat Sewer Rod Holders

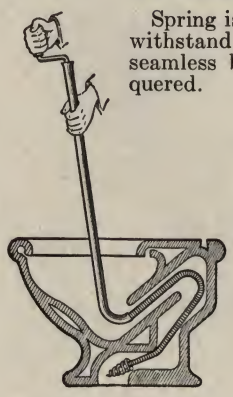


This device is a necessary aid in operating and holding flat sewer rod. It enables one man to quickly and safely uncoil the rod as it is fed into the sewer.

Made of heavy flat steel with black enameled finish.

No.	Each	Description	Weight Pounds
0	$.90	For 1/4-Inch Flat Rods	1
1	1.20	For 1/2x1/16 and 3/4x1/16-Inch Flat Rods	1½
2	1.50	For 3/4x1/8-Inch Flat Rods	3¼
3	2.00	For 1x1/8 and 1¼x1/8-Inch Flat Rods	4¼

Plumbers' Closet Augers



Spring is of specially prepared spring wire to withstand most severe strains. Heavy gage, seamless brass guide tube, polished and lacquered.

Tempered—7/16-Inch

No.	Each	Lgth. Ft.	Wt. Lbs.	No.	Each	Lgth. Ft.	Wt. Lbs.
3A	$1.40	3	2	9A	$2.00	9	3½
6A	1.70	6	2¾	..	....	.	...

Music Wire—7/16-Inch

3P	$1.90	3	2	9P	$2.70	9	3½
6P	2.30	6	2¾	..	....	.	...

Multicoil—3/8-Inch Construction

3X	$3.80	3	2¼	6X	$5.00	6	3¼

Plumbers' Flat Sewer Rods

For cleaning waste pipe and sewers. Made of special oil-tempered spring steel that will not curl after constant use. Complete with sewer point and slide handle.

No. A furnished with solid oval head; other sizes, with Universal all-revolving split roller head, or revolving spear head.

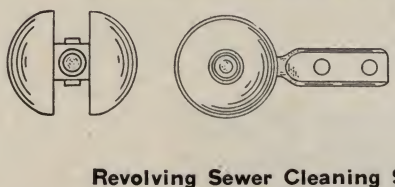
Specify kind of head desired when ordering.

No.	Size In.	For Pipe	Length 25-Ft. Each	50-Ft. Each	75-Ft. Each	100-Ft. Each	Wt. Lbs. 25'
A	1/4x1/16	Small Pipe	$1.50	$2.40	$3.30	$4.20	2
B	1/2x1/16	Medium Pipe	2.40	4.20	6.00	7.80	3
C	3/4x1/16	2 to 4" Pipe	3.90	5.90	7.90	9.90	4
D	3/4x1/8	4 to 6" Pipe	6.00	8.90	11.80	14.70	8
I	1 x1/8	4 to 8" Pipe	7.00	11.50	16.00	20.50	12
E	1¼x1/8	Large Pipe & Sewers	8.00	12.80	17.80	22.70	14

Roller Heads

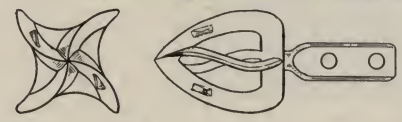
For Flat Sewer Rods

Universal All-Revolving Split Roller Head



No.	Size Rod Inches	Each
1-R	1/2x1/16	$1.00
2-R	3/4x1/16 and 3/4x1/8	1.30
3-R	1x1/8 and 1¼x1/8	1.70

Revolving Sewer Cleaning Spear Head

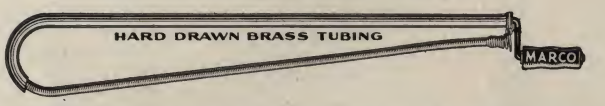


No.	Size Rod Inches	Each
1-S	1/2x1/16 and 3/4x1/16	$1.20
2-S	3/4x1/8	1.50
3-S	1x1/8 and 1¼x1/8	2.50

When Ordering

please refer to the sizes and numbers shown in this book. It will help us in filling your order accurately.

No. 12 Marco Closet Augers



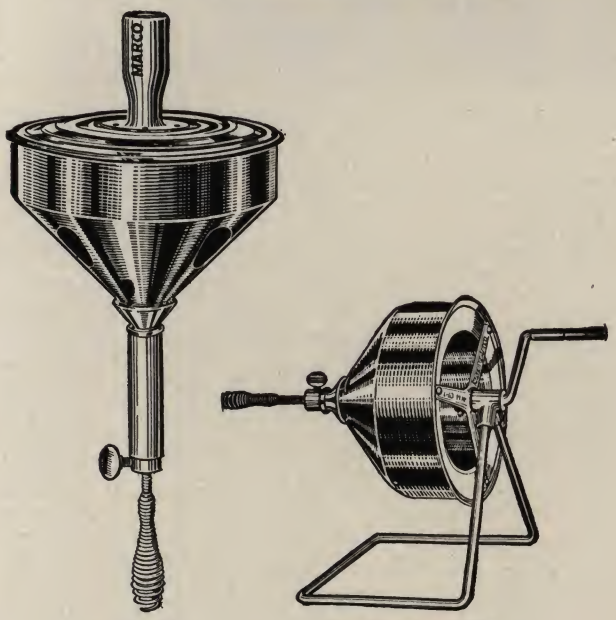
Flexible coiled spring of extra high carbon steel wire; tempered. Seamless brass tube, extra long and hard drawn to avoid crushing. "Can't-Lose-It" hook type spring head. Connection of rod and spring is safely located; always within brass tube which acts as a guide; prevents kinking or breaking of spring. Coarse threading on lower end of handle snugly fits the coiled spring and safeguards connection against expansion or breakage.

With **3**-Ft. Spring, Weight, 3¼ Pounds.....each **$2.90**
With **6**-Ft. Spring, Weight, 4¼ Pounds.....each **3.50**

Extra Auger Springs

3-Ft., Weight, 1½ Pounds.....each **$1.45**
6-Ft., Weight, 2½ Pounds.....each **2.05**

Marco Top-Snake Pipe Cleaners



No. 25 **Nos. 50, 75, and 100**

Has scientifically designed "Can't-Lose-It" bulbous head, tempered, yet very flexible for going through fittings.

Cuts large hole through stoppage and goes down at the vent tee.

Heavy gage spun aluminum conical shaped container, with handle, corrosion and rust-proof.

Revolving brass sleeve for hand grip. Has thumbscrew, drop-forged and hardened.

Operator has complete control of entire length of spring.

Clean, compact, convenient, small, light and sturdy.

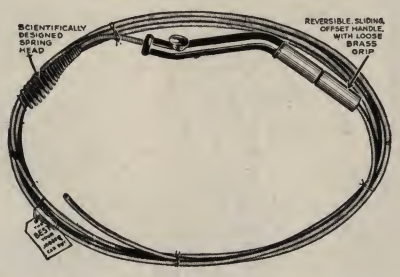
No.....	15	25	50	75	100
Complete.....each	$5.90	8.90	19.90	30.30	34.90
For Waste Lines....inches	1¼–2	1¼–2	1½–3	1½–3	1½–3
Diameter.....inches	7½	9½	13	16	16
Length of Spring.....feet	15	25	50	75	100
Diameter of Spring..inches	¼	⅜	½	½	½
Shipping Weight...pounds	5	11	38	55	65

Refill Springs

For Top-Snake No.....	15	25	50	75	100
Each.....	$2.70	3.95	9.95	14.55	19.15

Marco Flexible Coiled Springs

Waste Cleaning Tool



Springs are right hand coiled, making it unnecessary to tighten thumb screw with pliers or wrench. Turning of the spring automatically tightens it against thumb screw.

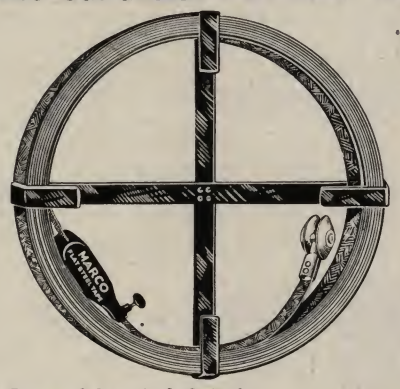
A patented sliding reversible handle is standard equipment. Loose brass grip permits the mechanic to turn and push spring continuously with one hand, freeing the other hand to guide spring. Handle can be reversed so that large or small end of spring can be used.

The ¼, ⅜ and ½-inch Marco Springs have "Can't-Lose-It" bulbous heads, tempered for hardness and toughness, yet very flexible.

Length Ft.	¼-Inch Size 14-Ga. Wire Each	Wt. Lb.	¾-Inch Size 11-Ga. Wire Each	Wt. Lb.	½-Inch Size 10-Ga. Wire Each	Wt. Lb.
10	$2.90	3	$2.85	4	.....	....
15	3.50	3½	3.50	5½	$3.95	8½
25	4.50	4½	4.75	8	6.05	12
35	....	...	6.30	10½	8.40	16½
50	....	...	7.90	14	10.75	22
75	....	...	....	....	15.35	35
100	....	...	....	....	19.95	45

Extra Crank Handle for ¼, ⅜, and ½-inch,
Weight, 1½ Pounds.....each **$1.20**

Marco Galvanized Flat Steel Tapes



Will lie flat and last indefinitely.

Galvanized for longer life and to prevent rust. Heavy steel frame holder prevents bending and breaking.

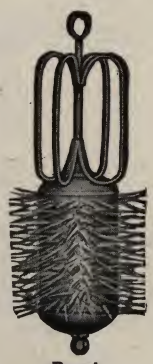
Revolving case hardened cutter wheels on hammer blow head, will not stick in fittings. Efficient for roots, grease, hair, lint, etc. Slightest pressure with fingers on thumb screw assures positive grip of handle on tape.

Complete with heavy band iron frame holder, revolving swivel hammer-blow head (hardened cutting rollers) and heavy cast iron sliding, set screw handle.

Size ¼x1/16 Inch				
Length.....feet	25	35	50	
Each.....	$2.70	3.15	3.60	
Size ⅜x1/16 Inch				
Length.....feet	25	35	50	
Each.....	$2.90	3.40	3.90	
Size ½x3/32 Inch				
Length.....feet	25	35	50	75	100
Each.....	$4.30	5.10	5.90	7.90	9.90
Size ¾x⅛ Inch					
Length.....feet	25	35	50	75	100
Each.....	$7.50	9.20	10.90	14.30	17.70

Sewer Cleaning and Conduit Tools

Scoops


Brush

Scraper

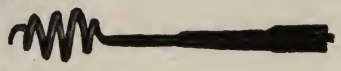
Made especially for the removal of stoppages and obstructions in sewer pipe. Every tool is made for a particular use.

For a sewer full of sand or nearly full, use scraper or scoop.

For sewers subject to accumulation of grease, use the wire brush with a rope.

Size Sewer Inches	Price, Each Scraper	Scoop	Brush	Size Sewer Inches	Price, Each Scraper	Scoop	Brush
4	$7.20	$7.20	$4.80	10	$10.80	$12.00	$15.00
5	7.20	7.20	6.00	12	12.00	14.40	18.00
6	8.40	8.40	7.20	15	14.40	18.00	21.00
8	9.60	9.60	10.50	..	.....	.....	.....

Screws



For paper, rags, etc., use screw.

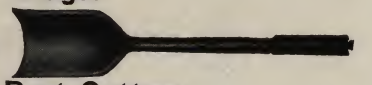
Price. Screw..each $3.60

Claws

For paper, rags, etc., use claw.

Price, Claw.each $3.60

Gouges



For unwiped joints with cement projecting.

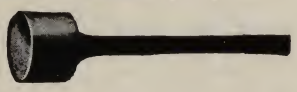
Price, Gouge. each $3.60

Ross Root Cutters

A new and simple device for the removal of roots from sewers and drains. By the use of this tool one of the problems of maintenance of system of sewers is much simplified.

Size.....in.	4	5	6	8	10	12	15
Price....ea.	$9.00	9.60	10.80	12.60	14.40	18.00	21.60

Plunger Conduit Tools



For smoothing the interior of conduits before drawing the cables. Furnished round or square for 3 or 4-inch conduit.

Price.....each $6.50

Sewer Rod Couplings

Couplings furnished attached to rods in three or four-foot lengths. In ordering specify length of rod.

Size.....inches	Malleable 1	1¼	Brass 1	1¼
3-ft. per 100 sec.....	$65.00	$80.00	$100.00	$120.00
4-ft. per 100 sec.....	65.00	80.00	100.00	120.00
Couplings, less rod..100 sets	40.00	55.00	65.00	100.00

Daisy Force Cups

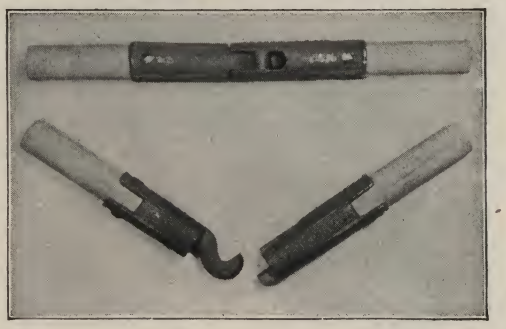
Made from red-non-blooming rubber.

Furnished with 24-inch green enamel screw handles.

Packed 1 dozen in a box.

No.....	4	102	111	112
Each.....	....	....	....	....
Size.....in.	4	4½	5¾	6
Wt. per Doz....lb.	10¼	12	14½	17

Felton's Sewer and Conduit Rod Couplings



Used for cleaning sewers and drains, and for rodding conduits.

Tapered rod-socket permits a drive fit. Extended straps assure strength and rigidity. Steel rivet through straps and rod clinches rod and coupling so that they will not work loose.

In ordering specify kind and diameter of coupling, whether with or without rods and desired length of rod.

Diameter Coupling Inches	Rods	Length Rod Feet	Malleable Iron Per 100 Sets	Brass Per 100 Sets
1	Hickory	3	$65.00	$100.00
1	Hickory	4	65.00	100.00
1¼	Hickory	3	80.00	120.00
1¼	Hickory	4	80.00	120.00
1	Drilled (No Rod)	...	40.00	65.00
1¼	Drilled (No Rod)	...	55.00	100.00
1	*Threaded	...	50.00	80.00
1¼	*Threaded	...	65.00	110.00

*For iron pipe.

Prices on couplings attached to iron pipe rods or steel tubing rods quoted on request.

No. 9 Climax Soil Pipe Test Plugs

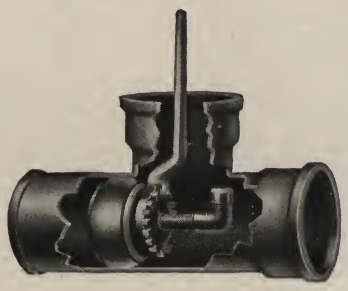
Wing Nut Type

Makes perfect closure on standard or extra heavy soil pipe.

Size....inches	2	3	4	5	6	8	10	12
No. 9.....each	$1.40	1.80	2.50	2.90	3.40	5.90	10.00	21.50

No. 11 Climax Test Plugs

Ratchet Style



Size In.	Each	Extra Rubbers Each
1½	$1.40	$.10
2	1.40	.14
3	1.80	.34
3½	2.50	.60
4	2.50	.64
5	2.90	.95
5½	3.40	1.05
6	3.40	1.10
7	4.70	1.66
8	5.90	2.91
9	8.00	3.94
10	10.00	5.03
12	21.50	7.21

Wrench for Ratchet Nut Plug.....each $.30

No. 101 Handy Plumber Force and Suction Pumps

Designed for household and general utility use. A pump that will clear out plumbing stoppages in the home quickly and efficiently

Has 1½-inch o.d. by 9-inch length seamless brass tubing. Rubber cup, 4⅝ inches o.d. Length over all, 14 inches.

Packed 12 to a shipping carton.

Weight, 1½ pounds.

No. **101**.....each **$2.00**

No. 99 Gas Main Force Pumps

This Gas Main Force Pump has patented valves, thereby increasing its durability and is one of the best pumps for clearing waste and service pipe.

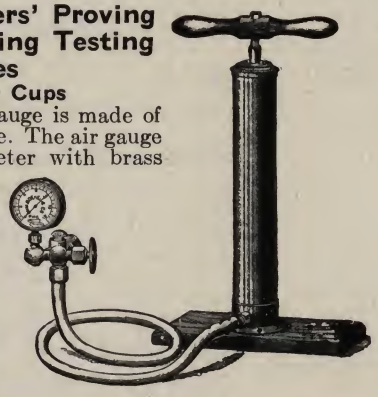
The chamber of the pump is made of seamless brass tubing, size 2⅛x 12 inches, and the air reservoir of extra heavy copper, size 8x10 inches, with stop cock and ¾-inch hose coupling.

Extreme height, 25 inches.

Price, No. **99**.....each **$23.00**

No. 92 Gas Fitters' Proving Pumps and Spring Testing Gauges

With Ether Cups



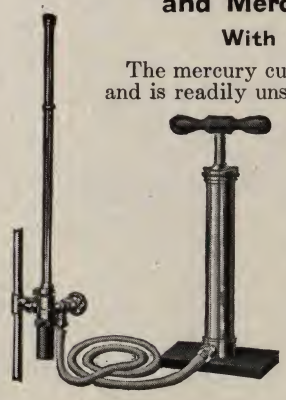
The spring testing gauge is made of brass with needle valve. The air gauge is 2½ inches in diameter with brass cover and registers up to 30 pounds. Pump is made of heavy seamless brass tubing and provided with patented valve, which increases efficiency.

Extreme height, 17 inches. Size of chamber, 12½x2½ inches.

Price, No. **92**, Complete.....each **$20.00**

No. 90 Gas Fitter's Proving Pump and Mercury Column

With Ether Cup



The mercury cup is at the bottom of the gauge, and is readily unscrewed. There is no chance for the mercury to spill over the brass parts and destroy them.

Column is graduated.

Pump is heavy seamless brass tubing, provided with a patented valve.

Length of column, 22 inches. Size of chamber, 12x2½ inches. Extreme height, 17 inches.

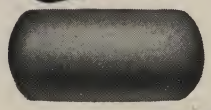
Price, No. **90**, Complete .....each **$18.00**

Plumbers' Lead Working Tools

No. 195 Hardwood Turn Pins

Sizes 1, 2, and 3, Dogwood.

No. **195**.....each **$.30**



No. 85 Hardwood Drift Plugs

Sizes 1, 1¼, 1½ and 2 inches, Dogwood.

No. **85**.....each **$.20**

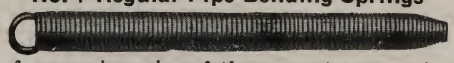
No. 84 Hardwood Dressers

Length overall, 13¼ inches; face, 8 inches; width, 1⅞ inches.

	*Dogwood	Boxwood	Lignum Vitae
No. **84**.....each	**$1.15**	**1.35**	**1.50**
Weight per Dozen.....pounds	11	12	13

*Also furnished 16 inches long, 2¼ inches wide, with 9½-inch face. Weight per dozen, 18 pounds. Each..... **$2.00**

No. 7 Regular Pipe Bending Springs



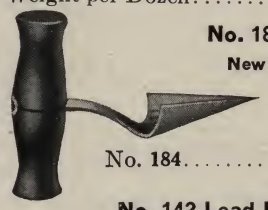
Made from spring wire of the correct temper to prevent kinking. Length, 23 inches.

Size.....inches	¾	1	1¼	1½	2
No. **7**.....each	**$.55**	.55	.70	.80	1.10
Weight per Dozen.....pounds	14	21½	31	41	58½

No. 5 Bending Pins

Made from round steel. Length, 13 inches.

Size.....inches	½	9/16
No. **5**.....each	**$.35**	.45
Weight per Dozen.....pounds	12	15



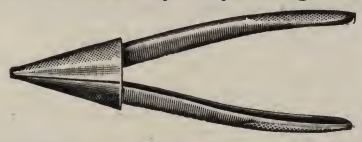
No. 184 Tap Borers

New York Pattern

Has heavy forged steel blade.

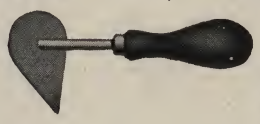
No. **184**.....each **$.40**

No. 142 Lead Pipe Expanding Pliers



Made entirely from extra heavy pressed steel.

No. **142**.....each **$4.00**



No. 164 Oval Shave Hooks

With malleable iron shank and heavy steel blade.

No. **164**.....each **$.40**

Pointed Soldering Coppers

Made from high quality drawn copper bolts. Iron handle shaft is securely forged into the copper; copper is a good heat retainer.

Weight per pair, 1, 1½, 2, 2½, 3, 4, 5, 6, 8, 10, 12, 14 and 16 pounds. Prices on application.

No. 31 Pexto Wired Soldering Copper Handles

Weight, 1¼ pounds per dozen. Packed in bulk as ordered.

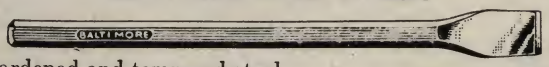
No. **31**.....per dozen **$.60**

No. 1 Baltimore Bent Picking Chisels

Hardened and tempered steel.

No		1
Each		$.54
Stock	inches	5/8
Length	inches	7½
Weight, per Dozen	pounds	6½

Baltimore Brick Chisels



Hardened and tempered steel.

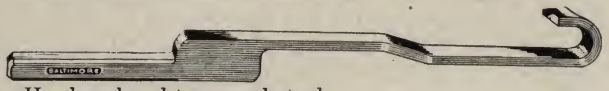
No		2	3	3½
Each		$.44	.54	1.08
Cut	inches	¾	1	1
Stock	inches	½	5/8	5/8
Length	inches	10	12	24
Weight, per Dozen	pounds	7	11	22

No. 4 Baltimore Cape Chisels

Hardened and tempered steel.

No		4
Each		$.40
Cut	inches	3/8
Stock	inches	½
Length	inches	6½
Weight, per Dozen	pounds	3¾

No. 5 Baltimore Ceiling Caulking Irons



Hardened and tempered steel.

No		5
Each		$1.80
Length	inches	14
Weight, per Dozen	pounds	22

Baltimore Double Caulking Irons

Hardened and tempered steel.

No		6	7
Each		$.60	.82
Stock	inches	5/8	5/8
Length	inches	9	16
Weight, per Dozen	pounds	9	16½

Baltimore Bent Caulking Irons

Hardened and tempered steel.

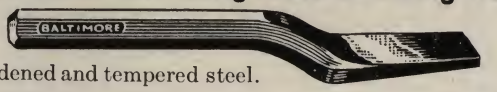
No		8	9
Each		$.54	.54
Stock	inches	5/8	5/8
Length	inches	6	6
Style		On	Off
Weight, per Dozen	pounds	6½	6½

Baltimore Offset Caulking Irons

Hardened and tempered steel.

No		10	11
Each		$.72	.72
Stock	inches	5/8	5/8
Length	inches	11	11
Style		Left	Right
Weight, per Dozen	pounds	8¾	8¾

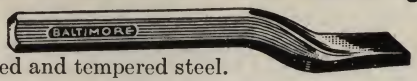
No. 12 Baltimore Long Nose Caulking Irons



Hardened and tempered steel.

No		12
Each		$.48
Stock	inches	5/8
Length	inches	8¾
Weight, per Dozen	pounds	8¼

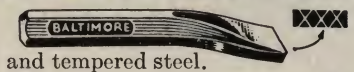
No. 13 Baltimore Short Nose Caulking Irons



Hardened and tempered steel.

No		13
Each		$.48
Stock	inches	5/8
Length	inches	7¾
Weight, per Dozen	pounds	7

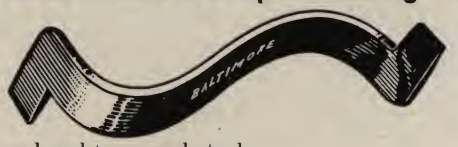
Baltimore Stub Caulking Irons



Hardened and tempered steel.

No		14	15
Each		$.44	.44
Stock	inches	5/8	5/8
Length	inches	5	5
Style		Inside	Outside
Weight, per Dozen	pounds	4¼	4¼

No. 16 Baltimore S Shape Caulking Irons



Hardened and tempered steel.

No		16
Each		$.90
Stock	inches	7/8x3/8
Length	inches	10
Weight, per Dozen	pounds	18

Baltimore Cold Chisels

Hardened and tempered steel.

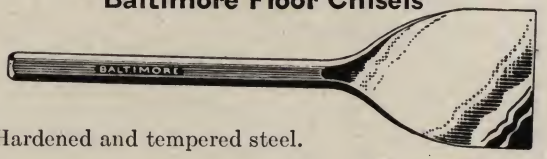
No		17	17A	18	18A
Each		$.30	.48	.64	.86
Cut	inches	½	¾	7/8	1
Stock	inches	½	¾	7/8	1
Length	inches	6	8	8½	9
Weight, per Dozen	pounds	3½	11¼	16	22

No. 19 Baltimore Diamond Point Chisels

Hardened and tempered steel.

No		19
Each		$.54
Cut	inches	½
Stock	inches	5/8
Length	inches	7
Weight, per Dozen	pounds	7

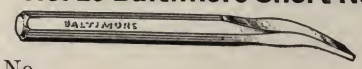
Baltimore Floor Chisels



Hardened and tempered steel.

No		20	21	22
Each		$1.00	1.18	1.36
Cut	inches	2	2½	3
Stock	inches	5/8	5/8	5/8
Length	inches	10	12	12
Weight, per Dozen	pounds	14	15½	16

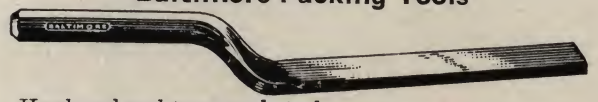
No. 23 Baltimore Short Nose Packing Tools



Hardened and tempered steel.

No.		23
Each		$.48
Stock	inches	5/8
Length	inches	7
Weight, per Dozen	pounds	6½

Baltimore Packing Tools



Hardened and tempered steel.

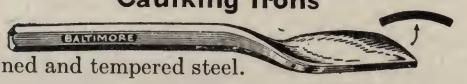
No.		24	25	26
Each		$.54	.64	.72
Stock	inches	5/8	5/8	5/8
Length	inches	12	14	16
Weight, per Dozen	pounds	8¾	9½	10½

No. 27 Baltimore Straight Packing Tools

Hardened and tempered steel.

No.		27
Each		$.82
Stock	inches	5/8
Length	inches	18
Weight, per Dozen	pounds	11¼

No. 28 Baltimore Broad Curved Nose Caulking Irons



Hardened and tempered steel.

No.		28
Each		$.54
Stock	inches	11/16
Length	inches	8
Weight, per Dozen	pounds	10½

No. 29 Baltimore Round Nose Chisels

Hardened and tempered steel.

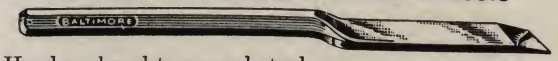
No.		29
Each		$.54
Cut	inches	½
Stock	inches	5/8
Length	inches	7
Weight, per Dozen	pounds	7

No. 32 Baltimore Straight Joint Chisels

Hardened and tempered steel.

No.		32
Each		$.56
Cut	inches	3/16
Stock	inches	½
Length	inches	10
Weight, per Dozen	pounds	6

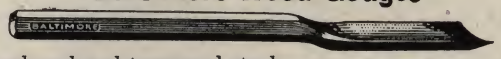
Baltimore All Steel Wood Chisels



Hardened and tempered steel.

No.		33	33½	34	34½
Each		$.60	.50	.67	.75
Cut	inches	¾	½	1	1¼
Stock	inches	½	7/16	5/8	¾
Length	inches	10	10	11	12
Weight, per Dozen	pounds	6¼	6¼	4¾	17¼

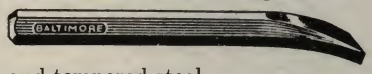
Baltimore Wood Gouges



Hardened and tempered steel.

No.		35	35½
Each		$.98	.98
Cut	inches	1⅛	1⅛
Stock	inches	5/8	5/8
Length	inches	10	10
Bevel		Outside	Inside
Weight, per Dozen	pounds	11	11

Baltimore Caulking Tools



Hardened and tempered steel.

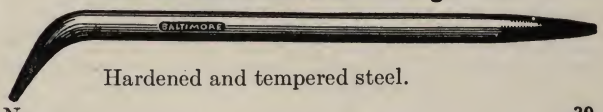
No.		36	37
Each		$.48	.48
Stock	inches	5/8	5/8
Length	inches	7	7
Style		Outside	Inside
Weight, per Dozen	pounds	7	7

Baltimore Closet Spud Wrenches

Hardened and tempered steel.

No.		38	38½
Each		$1.20	1.20
Size	inches	1¼&2	1½&2
Weight, per Dozen	pounds	17¾	17¾

No. 39 Baltimore Bending Pins

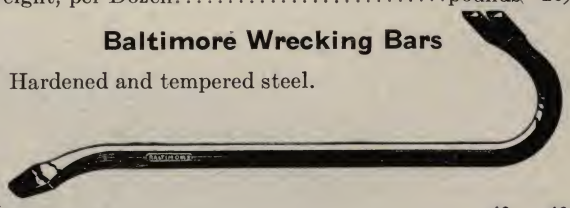


Hardened and tempered steel.

No.		39
Each		$.36
Size	inches	9/16
Length	inches	12
Weight, per Dozen	pounds	10½

Baltimore Wrecking Bars

Hardened and tempered steel.



No.		40	40A
Each		$1.00	.90
Size	inches	¾	5/8
Length	inches	24	18
Weight, per Dozen	pounds	47¾	24

No. 56 Baltimore Long Curved Nose Caulking Tools

Hardened and tempered steel.

No.		56
Each		$.54
Size	inches	⅞
Stock	inches	5/8
Length	inches	8
Weight, per Dozen	pounds	9

No. 58 Baltimore Curved Nose Gasket Tools

Hardened and tempered steel.

No.		58
Each		$.54
Size	inches	½
Stock	inches	5/8
Length	inches	8
Weight, per Dozen	pounds	9

No. 60 Baltimore Radiator and Faucet Wrenches

Hardened and tempered steel.

No.		60
Each		$.60
Size Stock	square inches	½
Length	inches	6½
Weight, per Dozen	pounds	4

No. 10685 Water or Gas Main Hand Calking Irons—Regular Pattern

Point, 1 inch wide; length, 1 inch. Octagon steel, 7/8 inch; length, 6 3/4 inches.

No.	1	2	3	4	5	6	7	8	9
Thickness Point..in.	1/8	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8

No. **10685**, All Sizes.....each **$2.88**

No. 10686 Water or Gas Main Hand Calking Irons—Concave Pattern

Point, 1 inch wide; length, 1 inch. Octagon steel, 7/8 inch; length, 6 3/4 inches.

No.	1	2	3	4	5	6	7	8	9
Thickness Point....in.	1/8	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8

No. **10686**, All Sizes.....each **$3.24**

No. 10687 Water or Gas Main Hand Calking Irons—Concave In Pattern

Point, 1 inch wide; length, 1 inch. Octagon steel, 7/8 inch; length, 6 3/4 inches.

No.	1	2	3	4	5	6	7	8	9
Thickness Point....in.	1/8	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8

No. **10687**, All Sizes.....each **$3.24**

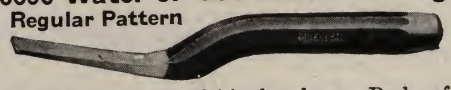
No. 10688 Water or Gas Main Hand Calking Irons—Concave Out Pattern

Point, 1 inch wide; length, 1 inch. Octagon steel, 7/8 inch; length, 6 3/4 inches.

No.	1	2	3	4	5	6	7	8	9
Thickness Point....in.	1/8	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8

No. **10688**, All Sizes.....each **$3.24**

No. 10690 Water or Gas Main Yarning Irons Regular Pattern



Point, 1 inch wide and 3 3/4 inches long. Body of 7/8-inch octagon steel; total length, 10 3/4 inches.

Size No.	1	2
No. **10690**.....each	**$3.96**	**3.96**
Thickness of Point.....inches	1/16	1/8

No. 10691 Water or Gas Main Yarning Irons Concave Pattern

Point, 1 inch wide; length, 3 3/4 inches.

Octagon steel, 7/8 inch; length, 10 3/4 inches.

No.	1	2
Thickness of Point.....inches	1/16	1/8
No. **10691**.....each	**$4.32**	**4.32**

No. 470 Wiedeke Ideal Hand Caulking Tools

Made of 7/8-inch octagon high quality tool steel, heat treated for toughness. Overall length 9 inches, power shank 11/16 inches in diameter, 2 3/8 inches long.

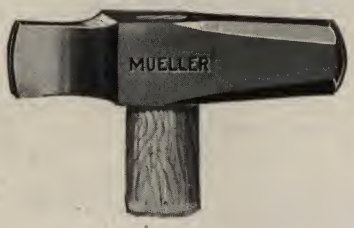
No. **470**.....each **$1.50**

No. 468 Wiedeke Ideal Hand Beading Tools

Made of 7/8-inch octagon high quality tool steel, heat treated. Length, 9 inches.

No. **468**.....each **$1.50**

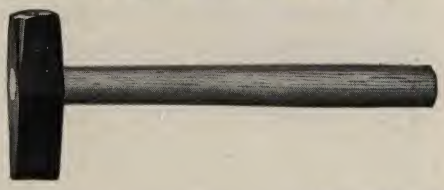
No. 10695 Mueller Regular Pattern Sledge Calking Irons



No.	Each	Thickness Point Inches
1	$7.50	1/8
2	7.50	3/16
3	7.50	1/4
4	7.50	5/16
5	7.50	3/8
6	7.50	7/16
7	7.50	1/2
8	7.50	9/16
9	7.50	5/8

The 9 sizes constitute a set for water or gas mains larger than 12 inches. Width of point, 1 inch; length of point, 1 inch.

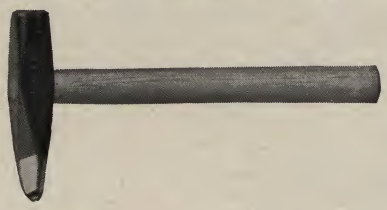
No. 10696 Mueller Pipe Cutting Chisels



Length of cutting edge, 1 7/16 inches. Weight, with handle, 3 1/2 pounds.

No. **10696**.....each **$6.48**

No. 10697 Mueller Dog Diamond Chisels



Size of point, 11/16x 5/8 inch. Weight with handle, 3 1/2 pounds.

Used for cutting off pipe, cutting holes in tanks, and for other work of similar character.

No. **10697**.....each **$6.48**

No. 10698 Mueller Calking Hammers

Weight.....pounds	2	2 1/2	3	3 1/2	4	5
No. **10698**.....each	**$4.32**	**4.46**	**4.68**	**4.90**	**5.12**	**5.58**

Any size or pattern of chisel will be made to order. Prices upon application and receipt of specifications.

No. 330 Baltimore Joint Chisels

Black Lacquer Finish—Hand-Forged

Size.....inches	1/2x10
No. **330**.....per dozen	**$6.72**
To Cut.....inches	3/16

No. 620 Baltimore Pneumatic Chisels

Black Lacquer Finish—Hand-Forged

Furnished either hexagon or round shank. Alloy or carbon steel as specified. Sizes 3/4, 13/16 and 7/8 inch; length as specified. Prices upon application.

No. 105 Baltimore Cold Chisels

Black Lacquer Finish—Hand-Forged

Size In.	Stock In.	Per Dozen	Size In.	Stock In.	Per Dozen
3/16x5	3/16	$2.00	3/4x7	5/8	$4.25
1/4 x5	1/4	2.00	7/8x8	3/4	5.55
5/16x5	5/16	2.00	1 x8 1/2	7/8	7.80
3/8 x5	3/8	2.25	1 1/8x9	1	9.35
1/2 x6	1/2	2.80	1 1/4x9	1	9.35
5/8 x6 1/2	9/16	3.35	.....	...	....

No. 106 Baltimore Extra Long Cold Chisels

Black Lacquer Finish—Hand-Forged

Size of steel and cut the same in all cases. Standard finish 12 and 18-inch lengths, black lacquer. Longer lengths, natural oil finish.

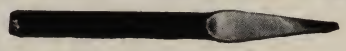
Polished blade and head when specified.

Any special lengths can be furnished. Prices upon application.

Size In.	12-In. Per Doz.	18-In. Per Doz.	24-In. Per Doz.	36-In. Per Doz.
1/2	$5.00	$7.50	.....	.....
5/8	6.50	9.50	.....	.....
3/4	8.00	10.50	$13.60	.....
7/8	10.00	13.65	16.20	.....
1	12.00	15.00	18.00	.....
1 1/8	15.20	19.45	24.50	.....
1 1/4	19.00	22.00	28.00	$36.00
1 1/2	.....	38.00	47.25	61.00

No. 205 Baltimore Cape Chisels

Black Lacquer Finish—Hand-Forged

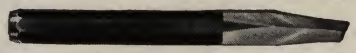


Polished blade and head when specified.
Order by size of cutting edge.

Cutting Edge Inches	Per Dozen	Size Inches	Length Inches	No. in Std. Pkg.	Weight Pounds per Dozen
1/8	$2.25	1/4	5	12	3/4
3/16	2.80	5/16	5	12	1 1/4
1/4	3.35	3/8	5	12	1 3/4
5/16	3.90	7/16	6	12	2 1/2
3/8	4.45	1/2	6 1/2	12	3 3/4
1/2	6.10	5/8	7	6	7
5/8	8.90	3/4	8	6	11
3/4	11.65	7/8	8	6	14 1/2
7/8	13.90	1	9	6	23 1/4

No. 305 Baltimore Diamond Point Chisels

Black Lacquer Finish—Hand-Forged



Polished blade and head when specified.
Order by size of cutting edge.

Cutting Edge Inches	Per Dozen	Size Inches	Length Inches	No. in Std. Pkg.	Weight Pounds per Dozen
1/8	$2.25	1/4	5	12	3/4
3/16	2.80	5/16	5	12	1 1/4
1/4	3.35	3/8	5	12	1 3/4
5/16	3.90	7/16	6	12	2 1/2
3/8	4.45	1/2	6 1/2	12	3 3/4
1/2	6.10	5/8	7	6	7
5/8	8.90	3/4	8	6	11
3/4	11.65	7/8	8	6	14 1/2
7/8	13.90	1	9	6	23 1/4

No. 310 Baltimore Half-Round Nose Chisels or Gouges

Black Lacquer Finish—Hand-Forged

Polished blade and head when specified.
Order by size of cutting edge.

Cutting Edge Inches	Per Dozen	Size Inches	Length Inches	No. in Std. Pkg.	Weight Pounds per Dozen
1/8	$2.25	1/4	5	12	3/4
3/16	2.80	5/16	5	12	1 1/4
1/4	3.35	3/8	5	12	1 3/4
5/16	3.90	7/16	6	12	2 1/2
3/8	4.45	1/2	6 1/2	12	3 3/4
1/2	6.10	5/8	7	6	7
5/8	8.90	3/4	8	6	11
3/4	11.65	7/8	8	6	14 1/2
7/8	13.90	1	9	6	23 1/4

No. 320 Baltimore Round Nose Chisels

Black Lacquer Finish—Hand-Forged

Polished blade and head when specified.
Order by size of cutting edge.

Cutting Edge Inches	Per Dozen	Size Inches	Length Inches	No. in Std. Pkg.	Weight Pounds per Dozen
1/8	$2.25	1/4	5	12	3/4
3/16	2.80	5/16	5	12	1 1/4
1/4	3.35	3/8	5	12	1 3/4
5/16	3.90	7/16	6	12	2 1/2
3/8	4.45	1/2	6 1/2	12	3 3/4
1/2	6.10	5/8	7	6	7
5/8	8.90	3/4	8	6	11
3/4	11.65	7/8	8	6	14 1/2
7/8	13.90	1	9	6	23 1/4

No. 800 Baltimore Bull Points

Natural oil finish standard. Packed in bulk.

Longer or intermediate lengths as specified. Prices upon application.

Size In.	12-In. Per Doz.	18-In. Per Doz.	24-In. Per Doz.	36-In. Per Doz.
3/4	$8.00	$10.50	$13.60	.....
7/8	10.00	13.65	16.20	.....
1	12.00	15.00	18.00	.....
1 1/8	15.20	19.45	24.50	.....
1 1/4	19.00	22.00	28.00	$36.00
1 1/2	.....	38.10	47.25	61.00

No. 500 Baltimore Star Drills

Black Lacquer Finish—Hand-Forged

Diam. Drill In.	Per Dozen — Length, Inches 8	12	18	24	Diam. Drill In.	Per Dozen — Length, Inches 12	18	24
1/4	$8.25	$8.50	$11.00	$13.50	1 1/4	$30.00	$35.00	$40.00
5/16	8.25	8.50	11.00	13.50	1 3/8	40.00	45.00	50.00
3/8	8.25	8.50	11.00	13.50	1 1/2	50.00	56.00	62.00
7/16	8.70	9.00	11.50	14.00	1 5/8	60.00	66.00	72.00
1/2	9.65	10.00	12.50	15.00	1 3/4	75.00	81.00	87.00
5/8	11.65	12.00	15.00	17.50	1 7/8	90.00	97.00	104.00
3/4	13.70	14.00	17.50	20.00	2	105.00	112.00	120.00
7/8	15.30	16.00	20.00	22.50	2 1/4	135.00	145.00	165.00
1	17.00	18.00	22.50	25.00	2 1/2	165.00	175.00	195.00
1 1/8	.....	24.00	28.00	32.00	...	.....	.....	.....

Carboloy Masonry Drill Points

STYLE X ($\frac{7}{16}$" and under)

STYLE Y (over $\frac{7}{16}$")

Drills 50 to 75 per cent faster and lasts up to 50 times longer than ordinary steel drills. Eliminates all noisy hammering and slow, hand chiseling. Does not leave frayed edges. No costly spoilage on fragile material.

Will drill concrete, carbon, brick, marble, tile, slate, limestone, asphalt, asbestos, plaster, and wallboard. Ideal for rapid, accurate installation of expansion anchors. Can be used in any rotary electric portable drill. For home use, may be used in hand brace. Packed in individual display boxes.

Diameter Drill Inches	Each	Diameter Shank Inches	Length Shank Inches	Length Overall Inches	Approx. Wt. Oz., Boxed
3/16	$3.00	11/64	1½	3	2
¼	3.00	7/32	1½	4	2
5/16	3.25	9/32	1½	4	2
⅜	3.60	11/32	1¾	4	3
7/16	4.00	⅜	1¾	6	4
½	4.50	⅜	1¾	6	5
9/16	4.70	7/16	2	6	6
⅝	5.50	½	2	6	7
11/16	6.25	½	2	6	8
¾	7.00	½	2	6	9
13/16	7.75	½	2	6	10
⅞	8.50	½	2	6	11
15/16	10.00	½	2	6	11
1	12.00	½	2	6	12
1 1/16	14.00	½	2	6	13
1⅛	14.50	½	2	6	14

Pilley's Scraping Tools

For scraping valves, journals, bearings, etc. Of durable tool steel, forged, tempered and polished so each is true in shape and has an edge keen for work.

Set contains one 14, one 12, one 10 and one 8-inch half round scraper, one 6-inch three cornered scraper and one 12-inch double end scraper. All mounted in a substantial case. Made in flat ground and hollow ground.

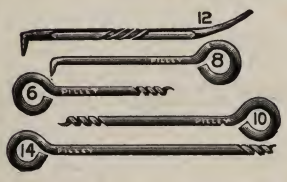
Shipping weight about 5 pounds per set.

Price No. 1, Set of Six Flat Ground Scraping Tools ..... per set **$4.75**

Price, No. 2, Set of Six Special Hollow Ground Scraping Tools ..... per set **6.00**

Special sizes and shapes made to order.

Pilley's Packing Tools



Will go into any valve, rod, pump or engine stuffing box. Of special tool steel and guaranteed not to break while in use removing packing from stuffing boxes of engines and valve rods. Nickel-plated, preventing rusting.

Made of 3/16, ¼ and 5/16-inch steel in 6, 8, 10, 12, 14 and 16-inch lengths. Each set packed in separate box.

Shipping weight: Set No. 8801 about 12 ounces each. Set No. 8802, about 21 ounces each.

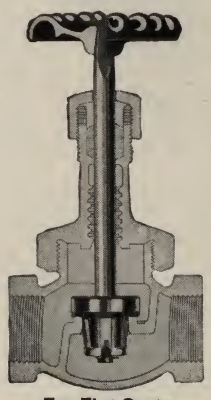
No. **8801**, Set of 4 Packing Tools, Containing a 6, 10 and 14-Inch Screw and one 12-Inch Double Ender..per set **$2.25**

No. **8802**, Set of 6 Packing Tools, Containing One Each 6, 10, 14 and 16-Inch Screw, One 8-Inch Hook and One 12-Inch Double Ender ..... per set **$3.25**

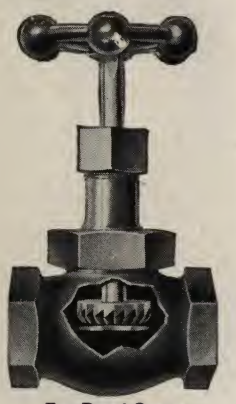
Carlan AAB Steam Valve Refacers

With Automatic Self Centering Cone

Seats on all makes of flat seat globe, cross and angle valves. Made by expert mechanics from the highest grade steel, heat treated and accurately ground.



For Flat Seats



For Bevel Seats

Stems or spindles are of the same diameter as the smallest stem or spindle used in any make of globe valve. This allows tool to enter any valve bonnet.

The use of the bonnet as a guide permits perfect valve performance.

The greater portion of bevel seat globe valves are 45° angle so for this reason regular bevel cutters are 45° angle. Bevel cutters of any angle may be had at slightly higher prices than regular stock items.

Proper refacing of bevel valves requires the use of both flat seat cutters and bevel seat cutters. Unfortunately this work can not be done with the same flat seat tool used on ordinary flat seat, non-metallic disc valves, due to the bonnet.

Refacers carrying the symbol BF are the same design as are those carrying the Symbol F except that the milling cutter of BF is much smaller.

Set furnished in metal case.

For Non Metallic Disc Valves

Flat Seat Refacer Sets				Single Refacers	
No.	Per Set	Tools to Set	Size Inches	Size In.	Each
1F	$23.65	4	½ to 1¼	* ⅜F	$4.40
2F	41.25	7	⅜ to 2	½F	4.95
3F	58.30	8	⅜ to 2½	¾F	5.50
4F	75.35	9	⅜ to 3	1F	6.05
				1¼F	6.60
				1½F	7.15
				2F	9.35
				2½F	17.05
				3F	19.25

Sets

The following sets represent complete equipment for properly handling Bevel seat valves and contain both 45° angle cutters and flat seat cutters. An equal number of each.

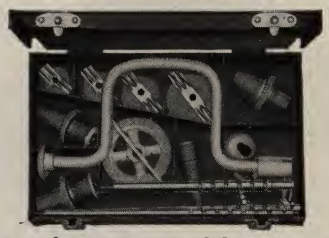
45° Angle Cutters					
Flat Seat Refacer Sets				Single Refacers	
No.	Per Set	Tools to Set	Size Inches	Size In.	Each
1B	$27.50	4	½ to 1¼	* ⅜B	$5.50
2B	51.70	7	⅜ to 2	½B	6.05
3B	72.05	8	⅜ to 2½	¾B	6.60
4B	95.15	9	⅜ to 3	1B	7.15
				1¼B	7.70
				1½B	8.25
				2B	10.45
				2½B	20.35
				3B	23.10
For Regrinding Type Valves					
1BF	$23.65	4	½ to 1¼	* ⅜BF	$4.40
2BF	41.25	7	⅜ to 2	½BF	4.95
3BF	58.30	8	⅜ to 2½	¾BF	5.50
4BF	75.35	9	⅜ to 3	1BF	6.05
				1¼BF	6.60
				1½BF	7.15
				2BF	9.35
				2½BF	17.05
				3BF	19.25

Combination Sets

No.	Per Set	Tools to Set	Size Inches	No.	Per Set	Tools to Set	Size Inches
1CBF	$51.15	8	½ to 1¼	3CBF	$130.35	16	⅜ to 2½
2CBF	92.95	14	⅜ to 2	4CBF	170.50	18	⅜ to 3

*Will also handle ¼-inch valves.

Skinner Valve and Bibb Reseating Tools



Reseats flat and taper seat globe or angle valves, all bibbs, faucets, cocks, and small fixtures, in place, quickly and accurately. With the Skinner cutter, operating under screw feed, it leaves the worn, old seat glass smooth, level, and absolutely accurate and tight.

A guide pilot centers each cutter; a true taper cone centers each spindle.

Screw feed holds cutter down to the work and absolutely prevents chatter. Low spots on the seat, grooves, and uneven places have no effect. The cutter rotates on a level plane and is advanced by slight turns of the feed screw until the job is finished.

Stays in line during reseating. Its simple operation enables inaccessible globe valves, wall shower fixtures, and other difficult jobs to be reseated with the utmost ease. Saves tearing out leaky valves and fixtures.

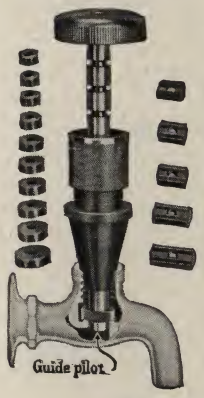
If used with valves other than standard flat or 45° seats, please specify make and figure number.

Packed in a neat enamelled steel case, complete with operating instructions.

For ¼ to 2-Inch Valves and ¼ to ¾-Inch Bibbs, Weight, 8 Pounds.....each **$20.00**

For ¼ to 3-Inch Valves and ¼ to ¾-Inch Bibbs, Weight, 10 Pounds.....each **30.00**

Skinner Self-Aligning Bibb Reseaters



For reseating flat seat bibbs in place.

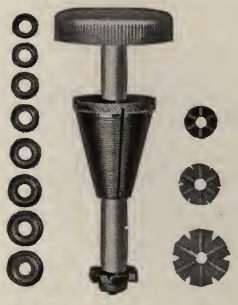
Perfect alignment. Guide pilot screwed on below the cutter sets into the seat opening and holds the cutter to absolute center while taper chuck is being screwed in. Interior threads not necessary as the fine hardened threads on the tapered chuck engage any surface they meet and hold with a wedge grip.

Furnished with five Skinner cutters of hardened steel, guaranteed to stay sharp, and 12 pilots covering all makes of flat seat bibbs, ¼ to ¾ inch.

Packed in a strong canvas bag. The cutters and guide pilots are strung on a special wire clip.

Complete.....each **$4.50**

Skinner Bibb Seat Dressers



Reseats leaky faucets, leaving seat glass smooth, accurate, and tight.

Has eight alignment guide discs, which center cutters, holding spindle in perfect alignment while cone is being tightened.

Non-chatter cone fits any faucet.

Four patented hardened and ground steel cutters, ⅜, ½, ⅝, and ¾ inch.

Chromium plated handle and spindle.

Packed in a canvas bag.

Each..... **$1.35**

No. 4-T-L Dexter Globe Valve Reseating Outfits

For brass and monel trim valves. Outfit consists of valve reseating machine cutters, disc cutting machine, which will cut flat, taper, and oval discs, disc chuck, extension spindles, recess cutters, chain yoke and operating parts.

Capacity, ¼ to 4 inches. Furnished with solid type cutters for ¼ to 2-inch sizes; adjustable cutters, 2 to 4-inch sizes. Universal cutters available, suitable for brass, monel, steel and stellite trim valves.

Packed in case, with removable tray for cutters.

No. 4-T-L, with Std. Flat & 45-Degree Cutters...ea. **$295.00**

With Std. Flat, 45, 55 & 75-Degree Cutters.....ea. **403.00**

Other types available for reseating valves up to 12 inches in size; complete information and prices on request.

No. 4170 Johnson Improved Double Cone Faucet Seat Dressers

For reseating faucets, basin cocks, compression valves, etc. Can be used on inside or outside threaded fittings. Four cutters with each dresser.

Cutters, sizes ½, ⅝, ¾ and ⅞ inch diameter.

Packed one in a box. Weight each, 13 ounces.

No. 4170.....each ....

We are in position to furnish practically everything used in factory, mill or shop.

Pexto Adze Eye Bell Face Nail Hammers

Round neck and poll. Drop-forged from one piece of high grade hammer steel, hardened face and tempered claws, thoroughly tested. Selected white hickory handle, polished. Polished, black enamel on neck and under claw. 6 in a box.

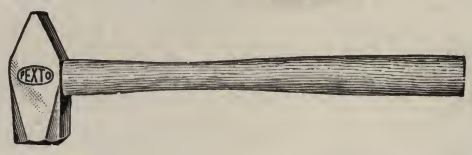
No.	11	11½	12	13
Per Dozen	$21.00	18.00	18.00	17.40
Size	1	1½	2	3
Length Handle in.	13½	13	12¾	12⅜
Wt. without Handles. lbs.	20	16	13	7

Pexto Machinists' Ball Pein Hammers

Made of drop-forged steel with polished face and pein; black body. Nos. 1 and larger packed 4 to a box; Nos. 0 and smaller packed 6 to a box.

No. and Size	Per Dozen	Length Overall Inches	Wt. Lb. without Handle	No. and Size	Per Dozen	Length Overall Inches	Wt. Lb. without Handle
6S	$16.50	17	2½	00S	$10.58	13	¾
4S	13.96	16	2	000S	10.50	12	½
2S	12.60	15	1½	0000S	10.58	12	⅜
1S	11.92	15	1¼	00000S	10.58	11	¼
0S	11.24	14	1	.....	.....	..	..

Pexto Blacksmiths' Hand Hammers



Polished drop-forged steel. Hardened face and pein. Correctly tempered. Select hickory handle.

Packed 4 in a box.

No.	61	62	63
Per Dozen	$24.06	22.40	20.00
Length over all ....inches	16	16	15
Weight, without Handle....pounds	3	2⅝	2

WHEN ORDERING *please refer to the sizes and numbers shown in this book. It will help us in filling your order accurately.*

No. ER Empire Brand Round Point Shovels

C Grade—Plain Back—Strap Socket—D Handle

For handling ballast and crushed rock; also for sewer and excavating work.

Blade, 15-gage carbon steel, heat treated, black finish. Handle is No. 1 grade, sanded and waxed; length, 27 inches.

Blade lift, 5½ inches; handle lift, 17 inches.

Packed 6 in a bundle.

No.	ER
Per Dozen	$20.50
Size No.	2
Blade Dimensions ....inches	9x11¾
Weight per Dozen ....pounds	58

No. ELR Empire Brand Round Point Shovels

C Grade—Plain Back—Strap Socket—Long Handle

Specially made for spading and makes the use of a pick unnecessary. Intended for use when the material is not picked down.

Blade, 15-gage carbon steel, heat treated, black finish. Handle is No. 1 grade, sanded and waxed; length, 51 inches.

Blade lift, 5½ inches; handle lift, 33 inches.

Packed 6 in a bundle.

No.	ELR
Per Dozen	$20.50
Size No.	2
Blade Dimensions ....inches	9x11¾
Weight per Dozen ....pounds	58

No. ES Empire Brand Square Point Shovels

C Grade—Plain Back—Strap Socket—D Handle

Blade, 15-gage carbon steel, heat treated, black finish. Handle is No. 1 grade, sanded and waxed; length, 27 inches.

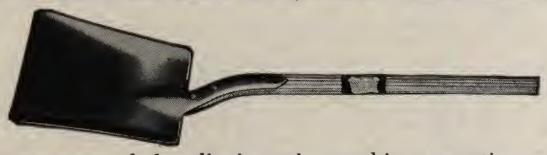
Blade lift, 6½ inches; handle lift, 19 inches.

Packed 6 in a bundle.

No.	ES
Per Dozen	$20.50
Size No.	2
Blade Dimensions ....inches	9¾x11¾
Weight per Dozen ....pounds	58

No. ELS Empire Brand Square Point Shovels

C Grade—Plain Back—Strap Socket—Long Handle



For sewer and clay digging; also used in excavating.

Blade, 15-gage carbon steel, heat treated, black finish. Handle is No. 1 grade, sanded and waxed; length, 51 inches.

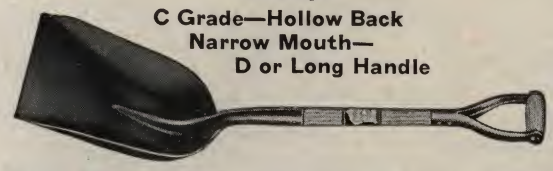
Blade lift, 6½ inches; handle lift, 33 inches.

Packed 6 in a bundle.

No.	ELS
Per Dozen	$20.50
Size No.	2
Blade Dimensions ....inches	9¾x11¾
Weight per Dozen ....pounds	58

Vulcan Brand Eastern Pattern Locomotive Scoops

C Grade—Hollow Back
Narrow Mouth—
D or Long Handle



Blade, 16-gage carbon steel, black finish. Handle is No. 1 grade, sanded and waxed. Length D handle, 27 inches; long handle, 51 inches. Blade lift, 6½ inches. D handle lift, 21 inches; long handle lift, 33 inches. Packed 6 in bundle.

D Handle No.....	EV2	EV4	EV6
Long Handle No...	EV2L	EV4L	EV6L
Per Dozen.....	**$20.50**	**22.10**	**23.70**
Size No.....	2	4	6
Blade Dimen....in.	11¾ x 14¾	12¼ x 15¾	12¾ x 16¾
Weight per Doz..lb.	63	69	75

No. 322 Akron Brand Furnace Scoops

Hollow Back—Armor D Handle

Blade of special analysis high carbon steel, 16-gage. Dimensions, 9½x14 inches. Size, 0. Black finish.

Handle is made of northern ash, carefully sanded and waxed.

Packed ½ dozen to a bundle.

Wt. per dozen, 50 pounds.

No. **322**.....per dozen **$16.80**

Sidewalk Cleaners

18-Gage Steel Blades
4-Foot Hardwood Handle

A scraper and shovel combined that makes easy the cleaning of sidewalks, streets, stable floors, etc.

The curved steel blade gets right under and sticks to the walk or floor without jumping.

High carbon steel is used in the blade.

Blade is fastened securely to handle by malleable iron socket.

No.....	**988**	**989**
Each.....	**$13.25**	**15.60**
Size.....inches	18	24
Weight per Dozen.....pounds	75	85

Lufkin Wizard Tape-Rules

Flexible—Rigid

Rule blade is of high quality tempered steel, stiffened by special forming. Blade has nickel-plated surface with dark figures and lines in sharp contrast. It is manually withdrawn and returned. Nickel-plated case.

Zero falls at inside of hook. Accurate butt end measurements can be taken from shoulders of blade. Marked in consecutive inches to 16ths both edges; first 6 inches, upper edge to 32nds. No. 686D marked in feet, 10ths and 100ths of feet upper edge, feet, inches and 16ths on lower edge.

Packed 1 in a box, 6 in a carton.

No. **686**, 72-Inch, ⅝-Inch Wide.....each **$1.00**
No. **688**, 96-Inch, ⅝-Inch Wide.....each **1.50**
No. **686**-D, 6-Foot, ⅝-Inch Wide.....each **1.25**
No. **6810**, 120-Inch, ⅝-Inch Wide.....each **2.50**

Lufkin Flexible Spring Joint Rules

Marked consecutive inches to 16ths, both sides. Brass plated trimmings. Concealed joints. Six-inch folds, ⅝ inch wide.

Cream Enameled No.	Cream Enameled Per Doz.	White Enameled No.	White Enameled Per Doz.	Length Feet	No. in Box	Weight Pounds Per Doz.
8514	**$4.20**	**8614**	**$4.60**	4	6	2
8515	**4.90**	**8615**	**5.40**	5	6	2½
8516	**5.40**	**8616**	**6.00**	6	6	3

Millers Falls Carpenters' Aluminum Levels

The frame of this level is cast aluminum designed to give strength and rigidity with minimum weight. Round white openings with glass protection for vials, giving clear vision and luminosity. Leveling surfaces, ends and round vial rims finished in red.

The Nos. **1012** and **1018** have 2 plumbs and 2 levels; others have 4 plumbs and 2 levels.

Packed 1 in a box.

No.	Each	Size, Inches	Wt., Lb.
1012	**$3.40**	12x2¼x1⅛	1¼
1018	**3.50**	18x2¼x1⅛	1¾
1024	**3.65**	24x2¼x1⅛	2
1026	**4.00**	26x2¼x1⅛	2¼
1028	**4.60**	28x2¼x1⅛	2½
1030	**4.85**	30x2¼x1⅛	2¾

Millers Falls White Pine Levels

For Carpenters' and Household Use

A plain level made of thoroughly air dried white pine covered with three coats of weather proof finish. Has 1 plumb and 1 level. Furnished with protected glasses. Finished in red. Packed one in a box.

No.	Size Inches	Weight Pounds	Each
312	12x2½x1¼	1	**$1.20**
316	16x2½x1¼	1	**1.30**
318	18x2½x1¼	1	**1.35**
320	20x2½x1¼	1	**1.40**
324	24x2½x1¼	1½	**1.50**
326	26x2½x1¼	1½	**1.55**
328	28x2½x1¼	1½	**1.65**
330	30x2½x1¼	1½	**1.70**

No. 3 Pexto Solbar Screwdrivers

Solid steel construction. Rod and blade highly polished.

Fitted with round fluted handle securely held in place by two heavy flush rivets so it cannot slip on the bar.

Length Blade Inches	Per Dozen	Length Overall Inches	Width of Point Inches	Thickness of Point Inches	Wt. Lb. per Doz.
2	**$5.25**	6¼	¼	.040	4
3	**5.95**	7¼	¼	.040	4½
4	**6.30**	8¾	¼	.040	4¾
5	**7.35**	9¾	¼	.050	5
6	**8.40**	10¾	5/16	.060	7
7	**9.75**	12¼	5/16	.070	7½
8	**11.15**	13¼	⅜	.070	10
10	**13.95**	16¼	7/16	.080	10¾
12	**16.65**	18¼	7/16	.080	11¾

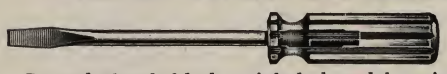
No. D Supirwin Screwdrivers

Chrome nickel molybdenum steel blade, hardened and drawn to exact specification, extends completely through handle. Blade is highly polished. Ferrule is turned from solid bar of tool steel and is securely pinned through handle and blade; will not break or come loose. Knurl grip for wrench use. Hardwood handle with deep machine cut flutes; will not slip; sanded and finished in transparent lacquer.

Packed 6 in a box.

Round Blade No.	Each	Size Blade In.	Wt., Lbs. per Doz.	Round Blade No.	Each	Size Blade In.	Wt., Lbs. per Doz.
D2	$.30	7/32x2	1¾	D6	$.42	5/16x6	5
D3	.32	7/32x3	2	D8	.56	3/8x8	8
D4	.36	¼x4	2¾	D10	.62	3/8x10	8½
D5	.40	5/16x5	4½	D12	.74	3/8x12	9½

No. 851 Millers Falls Screwdrivers

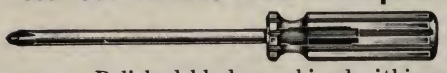


Chrome-Vanadium

Round shank blade, nickeled and burnished finish. Indestructible transparent red Permaloid handle. 6 in a box.

Length Blade.....inches	4	6	8	10	12
No. 851.....per dozen	$5.65	7.85	10.10	13.20	15.10
Diameter Blade...inches	9/32	5/16	3/8	3/8	3/8
Weight per Doz..pounds	2½	4	6½	9	10½

No. 850 Millers Falls Phillips Screwdrivers



Designed to handle Phillips recessed head screws. Polished blade machined within very close limits to fit screws. Transparent red permaloid handle.

Phillips Size No.....	1	2	3	4
Each.....	$.85	1.00	1.25	1.65
Length Blade.....inches	3	4	6	8
Diameter Blade.....inches	9/64	¼	5/16	3/8

No. 909 Millers Falls Screwdrivers

Designed on modern lines, well made and well finished. Blades are hammer forged from a high grade of tool steel and carefully hardened and oil tempered. Square tang holds blade in place. Handle is polished hardwood with longitudinal corrugations to keep the hand from slipping. The handles are protected from splitting by heavy steel ferrules.

Packed 6 in a box.

Size In.	Wt., Lbs. per Dozen	Per Dozen	Size In.	Wt. Lbs. per Dozen	Per Dozen
2	1¼	$3.15	10	6⅜	$6.80
3	1¼	3.55	12	6⅞	8.40
4	2¼	3.80	14	8	9.65
5	3¼	4.20	16	9	11.55
6	3½	4.40	18	10	13.00
8	5¼	5.75	..	....	.....

No. 4 Millers Falls Auger Handles

The feature of this handle is its ratchet construction—operating both to right and left by means of small lever. This permits its working effectively in close corners.

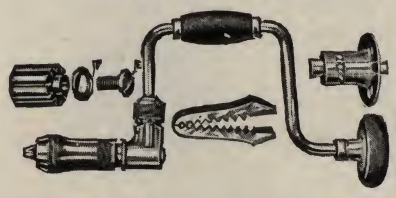
Chuck holds practically all sizes of bit and auger shanks.

Hardwood handles. Chuck shell japanned. Other metal parts nickeled.

Packed one in a box.

Length.....inches 15
Weight.....pounds 2¾
No. 4.....each $5.30

Millers Falls Ratchet Bit Braces



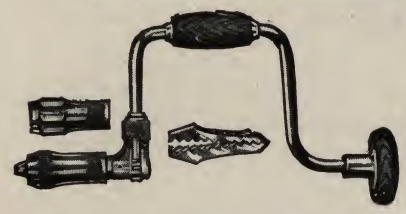
Holds bit shanks only. Barber chuck with forged steel alligator jaws. Boxed ratchet. Ball-bearing steel clad head, with steel quill. Handle has inserted metal rings. Tropical hardwood head and handle. Exposed metal parts are nickel-plated and buffed.

This brace will fulfill every boring requirement where bit shanks only are used.

Packed ⅙ dozen in a box.

No.....	30	31	32	33	34
Each.....	$5.70	5.50	5.30	5.30	5.30
Sweep.....inches	14	12	10	8	6
Wt. per ⅙ Dozen. ..pounds	6¾	6	5¾	5	4½

Millers Falls Ratchet Bit Braces

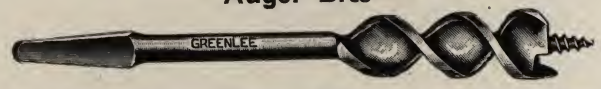


An inexpensive series made for those whose work does not require the refinements of the higher priced braces. Stained hardwood head and handle. Exposed parts nickeled. Barber chuck with cast alligator jaws. Semi-boxed ratchet. Handle has inserted metal rings. Head is screwed on securely and is held by two screws. Plain bearing.

Packed six in a box.

No.	Each	Sweep Inches	Wt., Lbs. per ½ Dozen	No.	Each	Sweep Inches	Wt., Lbs. per ½ Dozen
421	$3.70	12	16½	423	$3.50	8	14¼
422	3.50	10	15¾	...	....	..	....

No. 44 Greenlee Unispur Plumbers' Auger Bits



Has 5½-inch overall length. Sizes 1-inch and smaller have about 3-inch twist and larger sizes, 2¼-inch twist. The smaller sizes have a medium pitch screw point, and the larger sizes, to permit easier boring, are fitted with a finer point.

Sizes 1¼-inch and under are packed 6 in a standard package: over 1¼-inch, 3 in a standard package.

Size in 16ths Inches	Price per Dozen	Size in 16ths Inches	Price per Dozen	Size in 16ths Inches	Price per Dozen
10	$6.00	15	$9.50	24	$18.00
11	7.00	16	9.50	28	22.00
12	7.00	18	12.00	32	26.00
13	8.25	20	14.00	36	52.00
14	8.25	22	16.00	40	56.00

Irwin Expansive Bits

This bit eliminates loose plates and holds the blade in a solid clamping device which is part of the head.

Made of special steel, heat treated; blades are tempered.

Packed 1 in a box; 6 in a carton.

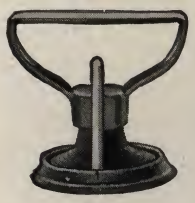
No. 1, Cuts ⅝ to 1½ In., Wt. 4½ Lb.....per doz. $15.80
No. 2, Cuts ⅞ to 3 In., Wt. 6¼ Lb.....per doz. 18.40

Extra Blades

No.....	1	2	3	4
For No. 1 Expansive Bit..per doz.	$3.00	$3.75	....	....
For No. 2 Expansive Bit..per doz.	....	....	$5.25	$6.00

Clancy Sure-Grip Eveready Lifters

Full Automatic Release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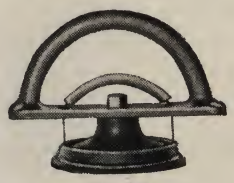
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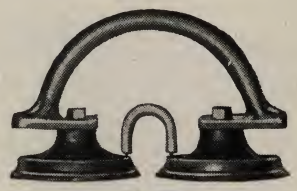
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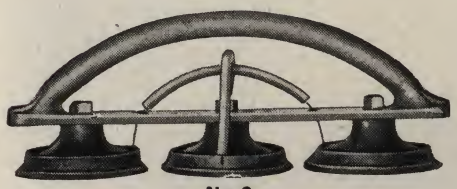

No. 3

No. 10

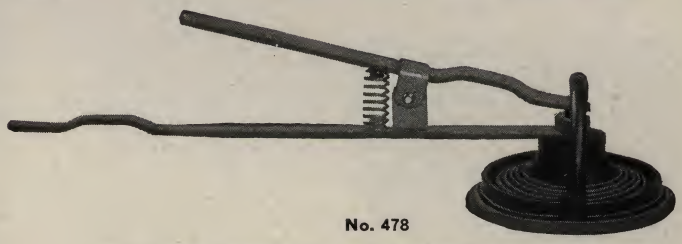
No. 222

Used wherever sheets of metal, glass or smooth surfaced materials are to be moved—to or from stock piles, to or from machines—or in processes of construction of fabrication.

Made in many sizes and styles to fit various applications on plain or oiled surfaces. Will successfully handle as much weight as one or more persons can move.

The pressure of vacuum cups to the surface of the material brings a positive grip. A flip of the finger automatically releases the vacuum and frees the lifter.

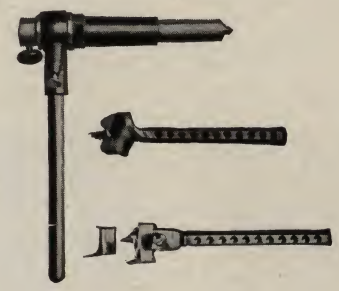
Built for heavy duty with stout handles shaped for comfortable handling.


No. 478

For feeding blanks to presses. Handle length, 12½ inches

No	1	1B	2	2B	3	10	222	478
Each	$2.50	2.50	5.00	5.00	7.50	1.85	3.50	2.50
Will Lift Up to ....pounds	60	60	120	120	180	60	120	...

Toledo Ratchet Boring Tools



This tool readily bores holes through joists, beams and other wood members of buildings where the parallel or adjoining timbers interfere with the use of the brace and bit. or mallet and chisel.

It enables the operator to run pipe through cleanly bored holes, does its work rapidly and easily, and saves all the strength of weight carrying timbers.

It has been found especially valuable in remodeling jobs where piping has had to be installed in structures already built.

Price, Boring Tools, without Bits	each	$6.00
Price, Expansion Bits, 1¼ to 2½-Inch, Incl.	each	6.00
Price, 2½-Inch Solid Bits, Extra	each	6.00
Price, 2 -Inch Solid Bits, Extra	each	4.50
Price, 1½-Inch Solid Bits, Extra	each	3.00
Price, 1 -Inch Solid Bits, Extra	each	2.20

Steel Tool Chests

Style A

Made from 1/16-inch cold rolled sheet steel with malleable iron corner pieces and hard wood braces. Fitted with heavy wrought iron hinges and hasp, with cover so arranged as to be held open by support from the back of chest.

Each chest is furnished with a first-class brass lock and 2 keys and bolts to screw down cover at front corners.

Nos. 3, 4, and 5 have handles on 4 sides.

Style A has either 1 or 2 drawers. Sent with 1 drawer unless specified with 2.

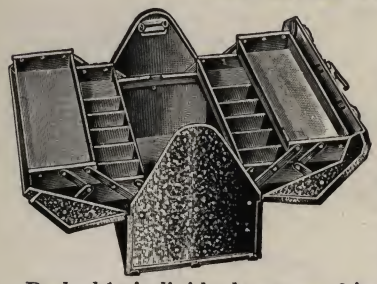
Style B sent with 2 trays unless ordered with 1.

This chest is lighter and stronger than a wood chest.

Style B

No.	Dimensions, Inches Length	Width	Depth	Price, Each Style A 1 Drawer	Style A 2 Drawers	Style B 1 Drawer	Style B 2 Drawers
1	24	12	11	$26.00	$30.00	$27.00	$32.00
2	30	15	14	35.50	39.00	38.00	42.00
3	36	17	16	39.00	42.00	43.00	47.00
4	42	20	19	45.50	47.00	48.00	52.00
5	48	22	20	51.00	55.00	53.00	58.00

No. 1018 Kennedy All Steel General Mechanics' Kits



The 4 trays swing out of kit when lids are opened. Leather handle, side catches and multiple change lock. Three skid rails welded to bottom. Seal brown ripple baked enamel finish outside, dark green smooth baked enamel inside.

Packed in individual cartons, 6 in a crate.

Dimensions	inches	18x19x12½
No. **1018**	each	**$8.00**
Net Weight	pounds	17½
Ship. Wt. per Crate	pounds	125

Lyon Steelart Combination Cabinets

A combination wardrobe and storage cabinet with one wardrobe shelf and coat rod; partition, and four half shelves adjustable on 2-inch centers.

Front edges are rounded and exclusive construction eliminates bolt heads on the front and sides.

Furnished with tamper-proof, grooved key lock. Chrome handles operate 3-point locking device. Doors swing open to a 180° angle.

Finish is green baked enamel. Other colors available at extra cost.

Width, 36 inches. Height, 78 inches.

Cabinet shipped set up.

No.		F-918	F-919
Each		**$31.30**	**35.20**
Depth	inches	18	24
Weight	pounds	182	210

No. 2300-12 Lyon Arc Welding Benches

Steel construction. Bench surface is 33 inches above the floor. Shelf back stop and four 32-inch dividers form four compartments, 3 inches wide, for welding rods. Front of shelf is handy for welding blocks.

Legs and end cross members are welded into a single unit. Front and back cross members and center brace are bolted to leg sections.

Shield, 35 inches high, sets inside a flange and is bolted securely. All edges are hemmed and top edge is reinforced with an angle frame.

Width, 37 inches; depth, 28 inches; height overall, 66½ inches.

Green baked enamel finish. Shipped knocked down.

No. **2300-12**.....each **$19.80**

Lyon Steel Bins

For Parts and Supplies

Bin dividers are held in place with snap-in fasteners permitting quick changes as may be desired. Shelves are held in place by clip-in fasteners which permit shelves to be adjusted without taking bins out of line. Shelves are turned up making a bin front.

Standard size, 36 inches wide, 12 inches deep and 84 inches high.

Furnished in green baked enamel.

Shipped set up ready for immediate use.

No. 626

Has 100 compartments for all types of tools and equipment including four shelves of sloping dividers and inserts and six box compartments each having three adjustable dividers.

Weight, 203 pounds.

No. **626**.....each **$38.50**

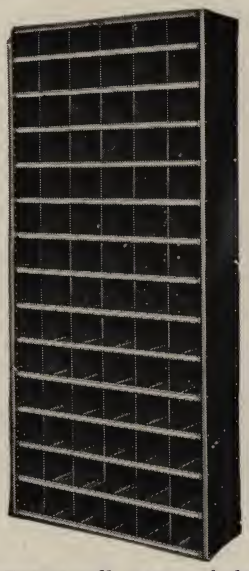
No. 602

For miscellaneous parts, packages and carton goods. Furnished with 32 openings, 9x9x12 inches and 4 openings, 9x12x12 inches.

Weight, 170 pounds.

No. **602**.....each **$31.25**

No. 601



For small parts, bolts, nuts, etc. Has 84 openings 6x12x6 inches.

Weight, 218 pounds.

No. **601**.....each **$41.75**

No. 624

Has 144 bins, 4x12x4½ inches and 18 bins, 4x12x6 inches.

Weight, 277 pounds.

No. **624**.....each **$54.50**

IN ADDITION TO THE

LYON

SHOP EQUIPMENT

illustrated here we offer many other varieties of bins, benches, tool stands, shelving, cabinets and tote boxes.

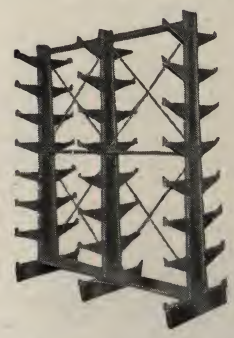
Tell us your needs.

★

PHONE OR WRITE FOR BULLETINS AND PRICES

Lyon Bar Racks

Adjustable Arms



Used to store a wide variety of long and short pieces of pipe, tubing, bars, rods and similar items.

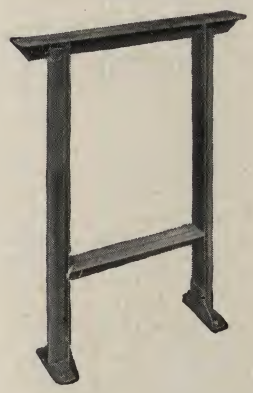
Permits convenient accessibility to this type of material because regular aisles can be used in loading or unloading the arms of the racks, thus eliminating the need for a large floor area.

Available in two heights, 79$\frac{5}{16}$ or 97$\frac{5}{16}$ inches. With seven adjustable arms on each side of each upright. The first and additional sections available in two lengths, 36 and 48 inches.

Finished in Lyon green.

Single face racks for use against wall also available.

Lyon Steel Bench Legs



Used on wood or steel top benches. Provide a sturdy support for bench tops. Holes punched in top member, cross member and legs to permit the attachment of tops, shelves and stringers at almost any desired location.

Finished in Lyon green baked enamel.

Shipped completely assembled.

No.....	2401-11	2401-12
Each.....	$2.95	3.30
Depth...in.	28	34
Height..in.	32¼	32¼

Style H Lyon Steel Stacking Boxes

For heavy loads from 75 to 125 pounds and for hard, rough usage.

Corners formed to give extra reinforcement. Tapered to permit stacking with minimum loss of capacity. Fitted with strong handles and runners.

Made of No. 18 gage steel.

No.....	421F14	421F15
Each.....	$1.60	1.75
Width (Top).in.	12	12
Length (Top).in.	18	21
*Height.....in.	6	6

Other sizes may be secured if ordered in lots of 100 or more of one size.

*Overall height including runners.

With Top and Bottom Shelf Only and Drawer

No.	Each	Size Inches	Wt. Lb.
*2970-11	$8.60	24x24x34	62
†2970-19	9.10	24x24x34	70
*2970-12	8.45	20x28x34	61
With Casters			
*2970-15	$10.10	24x24x37⅛	65
†2970-20	10.70	24x24x37⅛	73
*2970-16	9.95	20x28x37⅛	64

With Top and Bottom Shelf Only

2969-11	$6.55	24x24x34	48
2969-12	6.50	20x28x34	47
With Casters			
2969-15	$8.15	24x24x37⅛	51
2969-16	8.00	20x28x37⅛	50

With Center Shelf and Drawer

*2970-13	$9.85	24x24x34	77
†2970-21	10.50	24x24x34	85
*2970-14	9.70	20x28x34	76
With Casters			
*2970-17	$11.35	24x24x37⅛	80
†2970-22	12.00	24x24x37⅛	88
*2970-18	11.20	20x28x37⅛	79

With Center Shelf

2969-13	$7.95	24x24x34	63
2969-14	7.80	20x28x34	62
With Casters			
2969-17	$9.45	24x24x37⅛	66
2969-18	9.30	20x28x37⅛	65

Lyon Tool Stands

Available in stationary and portable models with variety of shelf and drawer arrangements.

Top is a small on-the-job bench. Top, bottom and optional center tray have flanged edges.

Swivel type caster with ¾-inch tread. Drawers have padlock attachment; flat key locks extra.

Green baked enamel finish.

Shipped set up.

With Top and Bottom Shelf and 3 Drawers

Has No. 2375-12 drawer unit.

No.	Each	Size Inches	Wt. Lb.
2970-25	$17.80	24x24x34	136

With Top and Bottom Shelf and 2 Drawers

Has No. 2375-11 drawer unit.

2970-23	$14.70	24x24x34	112

With Top and Bottom Shelf, Casters and 3 Drawers

Has No. 2375-12 drawer unit.

2970-26	$19.40	24x24x37⅛	139

With Top and Bottom Shelf, Casters and 2 Drawers

Has No. 2375-11 drawer unit.

2970-24	$16.30	24x24x37⅛	115

*Drawer, 12x22x5 inches.

†Drawer, 20x20x6 inches.

Manila 3-Strand Rope

Amco All-Weather

Contains all of the usual properties found in the best grades of untreated manila rope and is especially adapted for all kinds of heavy contracting work (block and falls use, etc.).

The treatment used protects strength and wearing qualities against deterioration. It is easy to handle under adverse weather conditions.

Dark brown in color with red and green outside marker yarns appearing in ¾ inch diameter and larger sizes. Wrapped in green burlap.

Supplied in half or full coils. Cut lengths (less than standard coils) take extra charge.

American Superior

Manufactured from long selected manila fiber. Fine first grade regular manila. For all work where strength and durability is required.

Has red and green marker yarn on outside of strand in ¾ inch diameter and larger sizes.

Can be supplied in half or full coils. Cut lengths (less than standard coils) take extra charge.

Approximate Weight and Strength

Diam. In.	Circum. In.	Lgth. Full Coil Ft.	No. Ft. per Lb.	Approx. Breaking Strength Pounds	Gross Weight Pounds Full Coil	Wt. Lb. 720 Ft. Half Coils	Wt. Lb. per Foot
3/16	6Th-F 5/8	3300	66.6	450	25 and 50	....	.015
1/4	6Th 3/4	2500	50.0	600	25 and 50	....	.020
5/16	9Th 1	2100	34.5	1,000	25 and 60	....	.029
3/8	12Th 1 1/8	1600	24.4	1,350	25 and 65	....	.041
7/16	15Th 1 1/4	1400	19.0	1,750	40 and 74	....	.0525
1/2	21Th 1 1/2	1200	13.3	2,650	90	54	.0750
9/16	1 3/4	1200	9.61	3,450	125	75	.104
5/8	2	1200	7.52	4,400	160	96	.133
3/4	2 1/4	1200	6.00	5,400	200	120	.167
13/16	2 1/2	1200	5.13	6,500	234	141	.195
7/8	2 3/4	1200	4.45	7,700	270	160	.225
1	3	1200	3.71	9,000	324	195	.270
1 1/16	3 1/4	1200	3.20	10,500	375	228	.313
1 1/8	3 1/2	1200	2.78	12,000	432	258	.360
1 1/4	3 3/4	1200	2.40	13,500	502	302	.418
1 5/16	4	1200	2.09	15,000	576	348	.480
1 1/2	4 1/2	1200	1.67	18,500	720	433	.600
1 5/8	5	1200	1.34	22,500	893	540	.744
1 3/4	5 1/2	1200	1.12	26,500	1073	648	.895
2	6	1200	0.927	31,000	1290	778	1.08
2 1/8	6 1/2	1200	.800	36,000	1503	908	1.25
2 1/4	7	1200	.685	41,000	1752	1057	1.46
2 1/2	7 1/2	1200	.600	46,500	2004	1209	1.67
2 5/8	8	1200	.524	52,000	2290	1368	1.91
2 7/8	8 1/2	1200	.465	58,000	2580	1556	2.15
3	9	1200	.414	64,000	2900	1746	2.42
3 1/8	9 1/2	1200	.372	71,000	3225	1923	2.69
3 1/4	10	1200	.335	77,000	3590	2148	2.99
3 5/8	11	1200	.273	91,000	4400	2642	3.67
4	12	1200	.230	105,000	5225	3140	4.36

The safe working load is figured at about 20 per cent of the figures shown for breaking strength.

Four-strand rope, with or without center core, approximately 5 to 7 per cent heavier than 3-strand.

Sisal rope weighs same as manila and the tensile strength of sisal rope is about 30 per cent less than manila.

Price Differentials

	Manila	Sisal
3/4-Inch Diameter and Larger	Basis Price	Basis Price
5/8-Inch Diameter	$.005	$.005
9/16, 1/2 and 7/16-Inch Diameter	.01	.01
3/8-Inch Diameter	.03	.02
5/16 and 1/4-Inch Diameter	.04	.03
3/16-Inch Diameter	.05	.04

Explanatory Notes on Wire Rope

Proper Working Loads

It is never advisable for the working load of a wire rope for general purposes, particularly running ropes, to exceed 1/5 of the breaking strength. This means that the factor of safety should be not less than 5. To determine proper working load, divide the breaking strength by the proper factor of safety; e.g., a 7/8-inch diameter 6x19 plow steel rope has a breaking strength of 28 tons and with a factor of safety of 5 the proper working load would be not over 5.6 tons.

Factors of safety in excess of 5, varying up to 8 and even more, are often required for safe and economical operation. The proper factor of safety for a wire rope should be determined by careful and thorough consideration of all pertinent data. Such data should include all loads, acceleration, deceleration, rope speed, rope attachments, the number, size, and arrangement of all sheaves and drums, existing conditions causing corrosion and abrasion, length of rope in service, economical rope life, and the degree of danger to life and property.

No fixed arbitrary values for factor of safety can be properly set for various classifications of service. These can safely vary, within limits, with the conditions present on individual installations.

Proper Sizes of Sheaves and Drums

Sheaves and drums should be carefully examined for proper size, free running, and proper groove diameters for most economical wire rope service. It is advisable to design the sheave and drum equipment so that the tread diameters are approximately as follows:

Average Diameters Recommended

For 6x 7 Rope, 72 times Rope Diameter
For 6x19 Rope, 45 times Rope Diameter
For 6x37 Rope, 27 times Rope Diameter
For 8x19 Rope, 31 times Rope Diameter

Various service conditions allow, and often require for economical service, changes from these diameters. For example, on larger hoisting installations, sheaves for use with 6x7 rope are sometimes set at 96 times the rope diameter and for 6x19 rope, are sometimes set as 90 times rope diameter.

It is also true that for certain classes of service ratios smaller than these are possible and economical, but it is advisable never to allow the sheave and drum diameters to be set below the following:

Minimum Diameters

For 6x 7 Rope, 42 times Rope Diameter
For 6x19 Rope, 30 times Rope Diameter
For 6x37 Rope, 18 times Rope Diameter
For 8x19 Rope, 21 times Rope Diameter

It should be thoroughly appreciated that diameters larger than those listed as minimum will give increased rope life, and consequently more economical service.

General Information About the Use and Care of Wire Rope

Uncoiling and Unreeling

Wire rope must not be coiled or uncoiled like a hemp rope for it will kink or untwist. When in a coil, roll on the ground like a wheel or hoop. When on a reel, mount the reel so that it will revolve, and run rope off slowly straight ahead.

Kinking

Do not allow a wire rope to kink, for ill effects will be sure and often sudden.

Cutting

When wire rope is to be cut, great care should be taken to securely bind the rope on each side of the place where it is to be cut with soft wire, so as to prevent the rope from untwisting or the strands from getting out of place.

Lubrication

Wire rope should be lubricated both when in use and when idle. A proper lubricant will not only protect the outer wires against action of moisture, water, acids, etc., but will also work in between the wires and the hemp center, protecting them as well as oiling the points of friction.

Wire Rope Prices, Strengths, and Weights

The strengths given below are accurate but it is important to realize that these are breaking strengths to which ropes in service should not be subjected. The factor of safety should be observed. Prices are for non-preformed.

6 Strands—19 Wires to the Strand—One Core

Diam. Inches	Improved Plow Steel Per Foot	Improved Plow Steel Strength Tons	Plow Steel Per Foot	Plow Steel Strength Tons	Mild Plow Steel Per Foot	Mild Plow Steel Strength Tons	Approx. Ship. Wt. Pounds per Ft.
1/4	$.13	2.9	$.12	2.5	$.10 1/2	2.3	.10
5/16	.13 1/2	4.5	.12 1/4	3.9	.10 3/4	3.5	.16
3/8	.14 1/2	6.3	.13	5.5	.11	5.	.23
7/16	.15 1/2	8.4	.14	7.3	.12	6.6	.31
1/2	.17	10.8	.16	9.4	.13 3/4	8.5	.40
9/16	.19	13.5	.18 1/4	11.7	.15 3/4	10.6	.51
5/8	.22 1/2	16.6	.21	14.4	.18	13.1	.63
3/4	.31	23.7	.28	20.6	.24	18.7	.90
7/8	.39	32.2	.34 1/2	28.	.29	25.4	1.23
1	.50	42.	.43	36.5	.37	33.	1.60
1 1/8	.62	53.	.54	46.	.46	41.5	2.03
1 1/4	.75	65.	.65	56.5	.56	51.	2.50
1 3/8	.90	78.5	.79	68.	.68	61.5	3.03
1 1/2	1.10	92.5	.93	80.5	.80	72.5	3.60
1 5/8	1.30	108.	1.08	94.	.94	85.	4.23
1 3/4	1.60	124.	1.30	108.	1.10	98.	4.90
1 7/8	1.75	142.	1.46	123.	1.25	112.	5.63
2	1.85	161.	1.58	140.	1.34	127.	6.40

6 Strands—7 Wires to the Strand—One Core

Diam. Inches	Improved Plow Steel Per Foot	Improved Plow Steel Strength Tons	Plow Steel Per Foot	Plow Steel Strength Tons	Cast Steel Per Foot	Cast Steel Strength Tons	Approx. Ship. Wt. Pounds per Ft.
1/2	$.13 1/2	10.3	$.12 1/2	9.	$.09	7.5	.38
9/16	.17	13.	.16 1/4	11.3	.11 1/2	9.4	.48
5/8	.20 1/2	16.	.19	13.8	.13 1/2	11.5	.59
3/4	.28 1/2	22.8	.26	19.8	.18 1/2	16.5	.84
7/8	.37	30.8	.32 1/2	26.8	.23	22.4	1.15
1	.48	40.	.41	34.8	.29	29.	1.50
1 1/8	.58	50.	.51	43.6	.36	36.4	1.90
1 1/4	.72	61.	.62	53.	.43	44.5	2.34
1 3/8	.88	73.5	.76	63.5	.51	53.	2.84
1 1/2	1.05	86.5	.90	75.	.60	62.5	3.38

8 Strands—19 Wires to the Strand—One Core Hemp, Strand or Wire

Diam. Inches	Improved Plow Steel Per Foot	Improved Plow Steel Strength Tons	Plow Steel Per Foot	Plow Steel Strength Tons	Plow Steel Per Foot	Plow Steel Strength Tons	Approx. Ship. Wt. Pounds per Ft.
1/4	$.15 3/4	2.47	$.14 1/4	2.15	$.12	1.97	.09
5/16	.16	3.85	.14 1/2	3.34	.12 1/4	3.07	.14
3/8	.16 1/2	5.45	.15	4.7	.12 1/2	4.33	.20
7/16	.17 1/2	7.3	.17	6.3	.14 1/4	5.8	.28
1/2	.19	9.5	.18 1/4	8.2	.15 1/2	7.5	.36
9/16	.22	11.8	.21	10.3	.18	9.4	.46
5/8	.25	14.4	.24	12.5	.20 1/2	11.4	.57
3/4	.34	20.5	.32 1/2	17.8	.27 1/4	16.3	.82
7/8	.43	27.6	.41	24.	.34	22.	1.11
1	.55	35.8	.50	31.2	.41	28.6	1.45
1 1/8	.68	45.2	.62	39.4	.51	36.	1.84
1 1/4	.82	55.7	.75	48.4	.62	44.4	2.27
1 3/8	.98	67.	.90	58.3	.75	53.4	2.74
1 1/2	1.19	79.5	1.06	69.	.88	63.3	3.26

6 Strands—37 Wires to the Strand—One Core

Diam. Inches	Improved Plow Steel Per Foot	Improved Plow Steel Strength Tons	Plow Steel Per Foot	Plow Steel Strength Tons	Mild Plow Steel Per Foot	Mild Plow Steel Strength Tons	Approx. Ship. Wt. Pounds per Ft.
1/4	$.16 1/2	2.8	$.16	2.4	$.13 1/2	2.2	.10
5/16	.17	4.4	.16 1/2	3.8	.13 3/4	3.4	.15
3/8	.17 1/2	6.1	.17	5.3	.14 1/4	4.9	.22
7/16	.18 1/2	8.3	.17 3/4	7.2	.15	6.6	.30
1/2	.20	10.6	.19	9.2	.16 1/4	8.4	.39
9/16	.23	13.2	.22 1/2	11.5	.19 1/4	10.5	.49
5/8	.27	16.1	.25	14.	.21 1/2	12.8	.61
3/4	.36	22.8	.34	19.8	.28 1/2	18.1	.87
7/8	.46	30.5	.43	26.5	.36	24.2	1.19
1	.59	39.5	.52 1/2	34.4	.44	31.5	1.55
1 1/8	.75	49.9	.66	43.5	.55	39.7	1.96
1 1/4	.86	61.5	.78	53.5	.65	48.9	2.42
1 3/8	1.05	74.3	.93	64.6	.78	59.	2.93
1 1/2	1.25	88.2	1.15	76.7	.95	70.	3.49
1 5/8	1.45	103.3	1.25	89.8	1.07	82.	4.09
1 3/4	1.75	119.5	1.50	104.	1.28	95.	4.75
1 7/8	1.90	137.	1.65	119.	1.40	108.5	5.45
2	2.10	155.	1.80	135.	1.55	123.	6.20

6 Strands—19 Wires to the Strand—One Hemp Center

Diam. Inches	Elevator Rope, Iron per Foot	Strength Tons	Approx. Ship. Wt. Lb. per Ft.
3/8	$.07 1/2	2.05	.23
7/16	.08 1/2	2.76	.31
1/2	.09 1/2	3.57	.40
9/16	.11 1/2	4.49	.51
5/8	.13 1/2	5.52	.63
3/4	.17	7.86	.90

18 Strands—7 Wires to the Strand—One Core Non-Spinning

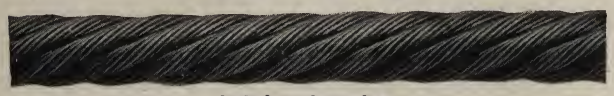
Diam. Inches	Improved Plow Steel Per Foot	Improved Plow Steel Strength Tons	Plow Steel Per Foot	Plow Steel Strength Tons	Approx. Ship. Wt. Pounds per Ft.
3/8	$.14 1/2	5.8	$.13	5.1	.24
7/16	.15 1/2	7.8	.14	6.7	.33
1/2	.17	10.	.16	8.7	.43
9/16	.19	12.5	.18 1/4	10.8	.55
5/8	.22 1/2	15.3	.21	13.3	.68
3/4	.31	21.9	.28	19.	.97
7/8	.39	29.8	.34 1/2	25.9	1.32
1	.50	38.8	.43	33.8	1.73
1 1/8	.62	49.	.54	42.5	2.19
1 1/4	.75	60.	.65	52.3	2.70
1 3/8	.90	72.5	.79	63.	3.27
1 1/2	1.10	85.5	.93	74.5	3.89

6 Strands—42 Wires to the Strand—7 Hemp Centers

Diam. Inches	Tiller Rope, Iron per Foot	Strength Tons	Approx. Ship. Wt. Lb. per Ft.
1/4	$.07 1/2	.625	.07
5/16	.08	.977	.11
3/8	.09	1.40	.16
7/16	.10	1.91	.21
1/2	.11 1/2	2.39	.28

Rope Shown above Can Be Furnished in Preformed Rope, Prices upon Application

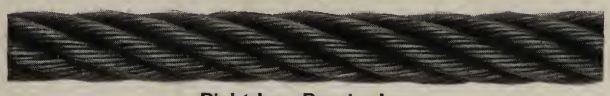
Lay of Wire Rope



Left Lay, Lang Lay

Right Lay, Lang Lay

Left Lay. Regular Lay



Right Lay, Regular Lay

Lang lay rope has a number of advantages over Regular lay. It is more resistant to bending stresses than Regular lay rope of the same grade and strand construction. The length of wear on each wire of the Lang lay rope is approximately twice the length of wear on the wires of the Regular lay before abrasion causes outer wires to break.

Non-preformed Lang lay rope has always been hard to handle, as it is much more readily kinked or bird-caged. Preformed Lang lay rope overcomes these objections. One precaution that must be rigidly enforced for Lang lay rope is to keep the equipment well grooved so that the tread of no groove is small enough to pinch the rope. Failure to appreciate this point has caused very erratic service with the use of Lang lay rope on soft, easily worn sheaves.

It is further recommended that stiff connections be used on Lang lay rope, as the use of swivels causes excessive unlaying of the rope.

Open Wire Rope Sockets

Grooves in baskets: one in sizes 1/4 to 3/4 inch; two in sizes 7/8 to 1 1/2 inches; three in sizes 1 5/8 and larger.

Pins are turned.

Diam. Rope Inches	Loose Each	Attached Each	Wt. Lb. Each	Diam. Rope Inches	Loose Each	Attached Each	Wt. Lb. Each
1/4–5/16	$1.25	$2.25	0.9	1 3/8	$9.00	$14.50	32.0
3/8	1.35	2.45	1.1	1 1/2	15.25	22.25	46.0
1/2–9/16	1.80	3.30	2.3	1 5/8	16.10	23.60	55.0
5/8	2.25	3.80	3.8	1 3/4	38.00	46.00	82.0
3/4	2.85	4.60	6.0	1 7/8	41.10	50.60	82.0
7/8	3.55	6.05	10.0	2	60.00	71.00	120.0
1	4.75	7.75	15.5	2 1/8	60.00	75.00	120.0
1 1/8	5.25	9.25	22.0	2 1/4	65.00	79.00	160.0
1 1/4	9.00	14.25	32.0	2 3/8	65.00	83.00	160.0

Closed Wire Rope Sockets

All standard type sockets are drop forged, weldless and stronger than any rope that may be inserted in them.

Diam. Rope In.	Loose Each	Attached Each	Wt. Lb. Each	Diam. Rope In.	Loose Each	Attached Each	Wt. Lb. Each
1/4–5/16	$.70	$1.70	.5	1 3/8	$7.50	$13.00	22.0
3/8	.85	1.95	.8	1 1/2	11.00	18.00	28.0
1/2–9/16	1.20	2.70	1.6	1 5/8	12.80	20.30	36.0
5/8	1.45	3.00	3.0	1 3/4	28.00	36.00	53.0
3/4	1.90	3.65	4.5	1 7/8	30.00	39.50	53.0
7/8	2.75	5.25	7.0	2	40.00	51.00	80.0
1	3.75	6.75	11.0	2 1/8	40.00	51.00	80.0
1 1/8	4.50	8.50	16.0	2 1/4	44.50	58.50	105.0
1 1/4	7.50	12.75	22.0	2 3/8	44.50	58.00	105.0

Bull Dog Wire Rope Clips

U-Bolts made from high quality steel accurately threaded for close fit with hexagon nuts. Base or Saddle of certified malleable iron of approved quality.

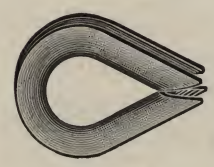
Diam. Rope, In.	Japanned per 100	Galv. per 100	Wt., Lb. per 100
3/16	$6.50	$8.00	6.5
1/4	6.50	8.00	13.2
5/16	7.00	9.00	17.1
3/8	9.70	12.00	25.5
7/16	12.50	15.50	30.0
1/2	14.50	18.50	41.5
9/16	19.00	24.50	60.0
5/8	19.00	24.50	69.3
3/4	27.00	35.00	100.5
7/8	38.50	50.00	143.0
1	46.50	60.00	169.6
1 1/8	75.00	95.00	258.7
1 1/4	90.00	112.00	299.0
1 3/8	105.00	130.00	500.0
1 1/2	120.00	150.00	570.0
1 3/4	310.00	415.00	1121.0
2	415.00	550.00	1487.0

No. G-411 Laughlin Wire Rope Thimbles

Regular Closed Pattern

Wrought Steel

Galvanized



For Size Rope, In.	Per 100	Wt. Lb. per 100
1/8	$4.40	2 3/4
3/16	4.40	2 3/4
1/4	4.40	3 3/4
5/16	5.25	7
3/8	6.00	8 3/4
7/16	7.00	14 1/2
1/2	8.00	16 1/2
5/8	11.00	40 1/2
3/4	13.00	50
7/8	16.00	65
1	21.00	105
1 1/8	38.00	148
1 1/4	44.00	181
1 1/2	120.00	300
1 3/4	160.00	500
2	200.00	725

Safe Line Wire Rope Clamps

Approved by the Underwriters' Laboratories, Inc.

Closed

Made entirely of high tensile strength alloy steel forgings. Consists of but four parts. The two taper threaded sections, which are placed on the exposed sides of the wire rope, are squeezed together in a vise-like grip when the two taper nuts are tightened. No special tools are required. Rope is free from projecting bolts and nuts, and the sharp severed ends are completely covered.

Clamp has a surface that is rounded and smooth.

For Wire Rope Diam. in.	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4
Natural.....ea.	$.95	1.10	1.30	1.60	2.10	2.60	3.30	4.15	4.95
Cad. Plated.....ea.	$1.10	1.30	1.55	1.90	2.45	3.00	3.75	4.65	5.50

American Single Jack Chain

No. 16 Actual Size

Brass or steel.

Packed in cartons of 50 feet each and on reels containing 500 feet.

No.	Brass per 100 Feet	Steel per 100 Feet	No.	Brass per 100 Feet	Steel per 100 Feet
24	$2.10	$1.65	16	$3.50	$1.65
23	2.10	1.60	14	5.50	1.90
22	2.00	1.55	12	8.00	2.25
21	1.90	1.50	10	12.00	2.75
20	2.00	1.50	8	18.00	3.25
19	2.25	1.45	6	27.75	4.50
18	2.50	1.50	5	35.00	5.50

Yale Ball Bearing Spur-Geared Chain Hoists

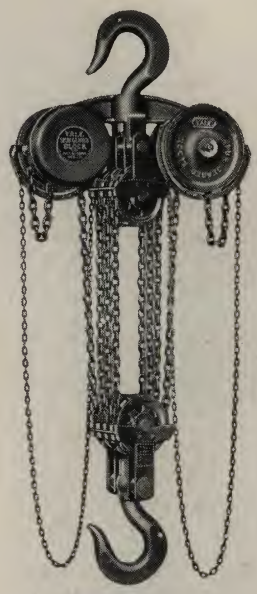
Capacity, 300 Pounds to 40 Tons

300 Pounds to ½ Ton

1 Ton

2 and 3 Tons

5, 6, and 8 Tons



12 and 16 Tons

Hoist mechanism if of the spur gear reduction, planetary system. Gears are mounted on bronze anti-friction bearings, oil duct lubrication. Gear pressure is so balanced that thrust is diametrically opposed, setting up a minimum of stress and maintaining initial high efficiency.

All members in suspension are steel.

Load brake is screw and disc type, self actuating, of ample area, with the ratio of brake pressure increasing in proportion to the increase in load.

Load sheave on which the suspended load is lifted, is mounted on two ball bearings of the radial thrust type, using high carbon chrome alloy steel balls and chrome vanadium races. Bearings are enclosed with dustproof metal and felt oil retaining rings.

Load sheave bearing is ground concentric, with .001-inch working tolerance.

Driving pinion shaft is hardened and ground with .001-inch working tolerance, and revolves in bronze bushings in the load sheave. Gear and pinions are provided with bronze bushings.

Yale hooks are drop-forged steel. Hooks will open slowly without fracture under severe overload. This provides warning of danger, and permits depositing the load without injury to the operator, to the load, or to the hoist mechanism. Free, easy, and universal movement is provided by swiveling on heavy duty ball bearings and swinging or rocking on a crosshead. The ball bearings are totally enclosed against dirt, dust, water, etc.

Yale chain is made exclusively of steel. It is formed, welded, heat-treated, tumbled, and gaged by a controlled process that provides the following physical characteristics:

1.—Chain having the necessary ductility and toughness to withstand heavy intermittent loads, and the characteristics whereby it will stretch before breaking.

2.—Uniformity as to size, with all links gaged on master gages for accuracy of pitch and overall dimensions.

3.—A minimum strength at the weld equal to the ultimate strength of the chain.

Drop-forged, 2-piece shackles with heat-treated suspension pin permits changing or replacing load chain without welding. Hand chain guide is continuous and adjustable which prevents fouling of hand chain.

Lubrication: Hoisting gears, oil and grease; bearings and brake, oil duct with ball valve dustproof oilers.

The final test on all finished units is with 50 percent overload, long ton rating.

Model	Rated Capacity Long Tons	Complete Standard Lift Each	Extra Lift per Foot	Travel of Lower Hook of Standard Lift Feet	Test Load in Long Tons	Minimum Distance Between Hooks Inches	Chain Pull to Lift Full Load Pounds	Chain Overhauled to Lift Load Foot Feet	Hoisting Speeds Feet per Minute: Full Load	Half Load	Quarter Load	Weight Pounds
BB	*300	$60.00	$1.80	8	*504	12	44	8	28	54	75	62
BB	¼	70.00	1.80	8	⅜	12	47	12½	17	30	45	62
BB	¼QS	70.00	1.80	8	⅜	12	74	8	17	32	48	62
BB	½	70.00	1.80	8	¾	12	57	21	8½	17	26	62
BB	½QS	90.00	1.90	8	¾	15½	85	14	9	18	27	94
BB	1	90.00	1.90	8	1½	15½	76	31	4¼	8.5	13	94
BB	1½	120.00	2.00	8	2¼	18	103	35	5.1	10.2	15.3	136
BB	2	140.00	2.10	9	3	21	112	42	3.9	7.8	11.7	204
BS	3S	180.00	2.60	10	4½	23	102	77	2.5	5.0	7.5	269
BB	3	180.00	3.00	10	4½	32	107	70	2.5	5.0	7.5	212
BB	4	220.00	3.20	10	6	37	116	84	1.9	3.8	5.7	301
BB	5	280.00	4.30	12	7½	45	102	126	1.4	2.8	4.2	413
BS	5D	280.00	4.20	12	7½	34	90	154	1.4	2.8	4.2	388
BB	6	330.00	4.30	12	9	45	122	126	1.2	2.4	3.6	413
BS	6D	330.00	4.20	12	9	34	108	154	1.2	2.4	3.6	388
BB	8	400.00	5.40	12	12	49	127	168	.85	1.7	2.6	502
BB	10	480.00	6.50	12	15	52	132	210	.65	1.3	2.0	612
BB	12	600.00	8.60	12	18	52	‡122	‡126	1.2	2.4	3.6	860
BB	16	720.00	10.80	12	24	60	‡127	‡168	.85	1.7	2.6	1046
BB	20	850.00	13.00	12	30	62	‡132	‡210	.65	1.3	2.0	1230
BB	25	950.00	13.00	12	37½	62	‡165	‡210	.50	1.0	1.5	1250
BS	30	1700.00	18.00	12	45	64	‡118	‡385	.40	.8	1.2	2150
BS	40	2700.00	25.00	12	60	71	‡120	‡539	.30	.6	.9	3200

S—Single Chain. D—Double Chain. *Capacity in pounds. ‡For each hand chain.

Watson-Stillman Outside Pump Hydraulic Jacks

This type of jack is used extensively by contractors, builders, dry dock and wrecking companies, machine shops, and on oil fields for raising drive pipe and casings.

The double plunger pump has a compact arrangement of two plungers working on the same axis. They can be operated singly or together by merely throwing a clutch in or out. The large plunger has an area four times that of the smaller one.

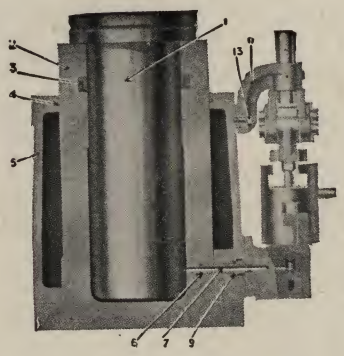
The cylinder is made of cast steel, the ram of semi-steel, and the cistern of cast iron. No stress whatever is put upon the cistern.

A boot of leather or canvas may be tied to ram head groove to protect ram from dirt when necessary.

Cap. Tons	Maximum Rise Inches	Each	Height Over All Inches	Diameter of Base Inches	*Cylinder U Packing Inches	Weight Pounds
60	12	$325.00	20½	12	4½x5½	380
60	18	345.00	26½	12	4½x5½	495
100	12	345.00	20½	13	5½x6½	480
100	18	365.00	26½	13	5½x6½	565
125	12	405.00	21½	14	6¼x7⅜	635
125	18	435.00	27½	14	6¼x7⅜	775
150	12	510.00	22½	15	7 x8⅛	830
150	18	540.00	28½	15	7 x8⅛	1010
200	18	640.00	30½	18½	8½x9⅝	1530

*With hemp.

Parts

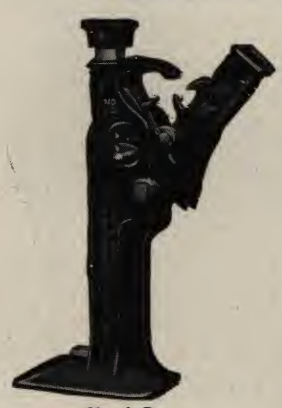


Capacity.....tons		60	60	100	100
Rise.....in.		12	18	12	18
1. Ram.....ea.		$50.00	$55.00	$60.00	$70.00
2. Cylinder.....ea.		150.00	170.00	170.00	210.00
3. Cylinder U Packing.ea.		3.50	3.50	4:19	4.19
4. Large Cistern Leather Pkg. ¼-In. Sq....per ft.		.20	.20	.20	.20
5. Cistern.....ea.		45.00	50.00	50.00	55.00
Capacity.....tons	125	125	150	150	200
Rise.....in.	12	18	12	18	18
1. Ram.....ea.	$75.00	$85.00	$95.00	$115.00	$175.00
2. Cylinder.....ea.	250.00	300.00	325.00	400.00	500.00
3. Cyl. U Packing.ea.	5.86	5.86	6.52	6.52	7.95
4. Large Cistern Lea. Pkg. ¼-In. Sq. per ft.	.20	.20	.20	.20	.20
5. Cistern.....ea.	60.00	70.00	75.00	90.00	135.00

6. Press Nipple Washer, ¾x5/16x3/16 Inch	each	$.03
7. Pressure Nipple	each	3.00
8. Suction Nipple	each	.60
9. Press Nipple Washer, 1x¾x3/16 Inch	each	.03
10. Filling Screw	each	.20
11. Piston Guide Bracket	each	7.50
12. Handles	per pair	2.00
13. ½-Inch Studs	each	.20

Duff-Norton Genuine Barrett Jacks

Trip and Automatic Lowering
Capacity, 15 Tons—Double Acting



No. 1-D

No. 110

No. 1-D is a trip jack with hook trip; action is quick and positive.

Nos. 1-A and **6-A** have the regular trip; a simple device which assures safe, quick, easy tripping.

No. 110 is a trip and automatic lowering jack. Can lift loads, lower loads gradually, or trip or drop loads from any elevation in its range.

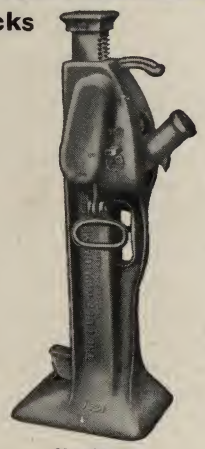
Furnished with square socket lever to fit lining bar. Add $1.00 to price if round socket lever and wood handle are desired.

No.	*1-D	*1-A	*6-A	†110
Each	$28.00	28.00	36.00	28.00
Height.....inches	22	22	28	22
Raise.....inches	13	13	19	13
Weight.....pounds	60	58	73	59

*Raises on upward or downward stroke.
†Fitted with automatic lowering device.

Duff-Norton Genuine Barrett Automatic Lowering Jacks

No. 1022



No. 1528

These jacks are widely used by industrial concerns, telephone and telegraph companies, street railway companies, steam railroads, mines, mills, contractors, truckmen, etc.

Automatic lowering jacks are ratcheted up or down, notch by notch, the direction being reversed by shifting the locking device at the side of the frame.

Nos. 1017 and 1020 furnished with single round sockets and 4-foot steel operating lever. No. 1022 is regularly furnished with double socket.

Nos. 1522, 1528, 2028 furnished with single socket and steel operating lever, but double socket can be furnished if desired.

No.	1017	1020	1022	1522	1528	2028
Each	$28.00	32.00	32.00	50.00	52.00	58.00
Capacity tons..	10	10	10	15	15	20
Height.....in.	17	20	22	22	28	28
Raise.....in.	9	11½	12	11½	18	18
Weight.....lb.	53	56	63	77	96	98

Duff-Norton Bell Bottom Jack Screws

Load centers on a full complement of chrome molybdenum steel balls, rotating in a machine-cut, grease-packed channel, reducing friction to a minimum.

Unbreakable, drop forged steel top grips the load with deep, sharp serrations.

One-piece solid steel screw with forged head; handles its rated capacity quickly and easily.

Extra heavy base double ribbed at throat, solid all the way around; not weakened by openings.

As a result of greatly reduced friction, a minimum amount of manual effort is required to lift a load.

Conform to S.P.R. 97–30 issued by the U.S. Department of Commerce, Simplified Practice Division.

Size Screw & Ht. Stand In.	*Each	Special Operating Lever Each	Height Overall Closed Inches	Height Overall Extended Inches	Wt. Lb.
		5-Ton Capacity			
1 x6	$2.60	....	8½	12¾	6
		10-Ton Capacity			
1¼x4	$2.90	$.60	6¾	8¾	6½
1¼x6	3.10	.60	8¾	12¼	9
1¼x8	3.40	.60	10¾	16¼	11
1¼x10	3.80	.60	12¾	20¼	13
		12-Ton Capacity			
1½x6	3.75	$.80	8¾	12¼	10½
1½x8	4.25	.80	10¾	15¾	14
1½x10	4.75	.80	12¾	20¾	15
1½x12	5.25	.80	14¾	23¾	19
		16-Ton Capacity			
1¾x8	5.00	$1.00	11½	17	17
1¾x10	5.75	1.00	13½	21	21½
1¾x12	6.25	1.00	15½	24½	24½
		20-Ton Capacity			
2 x6	5.25	$1.60	9¾	12¾	18
2 x8	6.00	1.60	11¾	16¾	21
2 x10	6.75	1.60	13¾	20¾	25
2 x12	7.50	1.60	15¾	24¾	29
2 x14	8.25	1.60	17¾	28¾	32½
		24-Ton Capacity			
2½x6	$7.75	$2.40	11	13¼	36
2½x8	8.75	2.40	13	17¼	41
2½x12	10.75	2.40	17	25¼	51½
2½x14	12.00	2.40	19	29¼	58½
2½x16	13.25	2.40	21	33¼	67
2½x18	14.50	2.40	23	37¼	72
		30-Ton Capacity			
3 x8	$17.50	$3.20	13	17	50
3 x14	19.50	3.20	19	28	73
3 x18	22.00	3.20	23	36	86
3 x24	25.75	3.20	29	48	128

*Not including lever bar.
†Operating levers furnished with jack on request.

Duff-Norton Self-Lowering Speed-Controlled Inverted Type Jacks

75 and 100-Ton Capacity

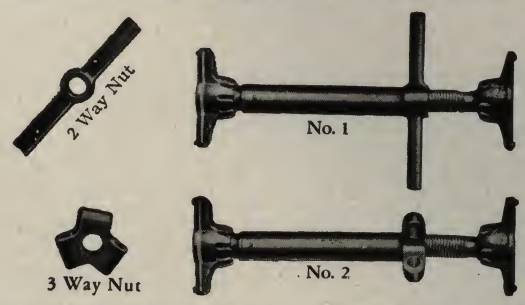
For lifting locomotives and all purposes where small head with heavy lifting capacity is required.

Standard is semi-keyed, permitting it to be quickly turned up or down by hand. Lubrication is automatic.

Diameter of base, 14 inches.

No.	Each	Cap. Tons	Ht. In.	Rise In.	Wt. Lb.
7263C	$444.00	75	26	14	383
1243C	475.00	100	24	11½	404
1263C	475.00	100	26	13½	411

Duff-Norton Extensible Steel Trench Braces

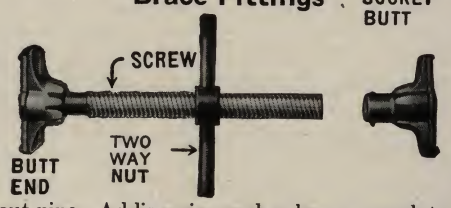


Regularly furnished with 2-way lever nut (No. 1) but can be furnished with 3-way nut (No. 2) if desired. The two-way lever nut provides great strength and safeguards against bending or breaking. The 3-way nut is advantageous when working in close quarters.

Ball and socket joint at each end permits easy adjustment to any angle. Easily adapted to any width trench by using longer or shorter lengths of pipe.

No.	Per Dozen	Pipe and Screw Diam. Inches	Length of Brace Closed Inches	Length of Screw Inches	Safe Extension of Screw Inches	Weight Pounds per Dozen
1001	$46.00	1½	16	10	6	180
1002	46.00	1½	18	12	7	200
1003	48.00	1½	21	14	8	212
1004	48.00	1½	24	14	8	221
1005	52.00	1½	27	16	9	240
1006	52.00	1½	30	16	9	247
1007	54.00	1½	36	18	10	273
1008	56.00	1½	42	18	10	300
1009	58.00	1½	48	18	10	325
1011	102.00	2	36	18	10	538
1012	104.00	2	42	18	10	564
1013	106.00	2	48	18	10	580
1014	108.00	2	54	18	10	608
1015	110.00	2	60	18	10	630

Duff-Norton Extensible Steel Trench Brace Fittings

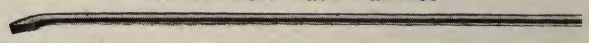


Without pipe. Adding pipe makes brace complete.

No.	Complete per Doz.	Socket Butts per Doz.	Diam. Screw Inches	Length Screw Inches	Safe Ext. of Screw, In.	Wt., Lb. per Doz.
C-14	$40.00	$10.00	1½	10	6	168
C-15	40.00	10.00	1½	12	7	174
C-16	42.00	10.00	1½	14	8	180
C-17	44.00	10.00	1½	16	9	186
C-18	46.00	10.00	1½	18	10	192
C-19	90.00	24.00	2	18	10	438

Duff-Norton Jack Handles

No. 518 Steel Jack Handles



No. 518.....each $1.75

No. 519 Wood Jack Handles

No. 519.....each $2.00

MATERIAL NOT LISTED

We can furnish practically everything used in mill, factory, or shop.

Please send us all of your inquiries.

Series 1100 Sunbeam Winter Air Conditioners

Oil Fired

Westmoreland

Saratoga

For producing filtered, humidified and circulated warm air.

The heating element is designed for the efficient and economical burning of oil. The sides of the heavy, boiler plate steel shell transmit the heat quickly to the circulating air, yet resist the action of high temperatures and the effect of frequent contraction and expansion caused by intermittent firing.

The extra large radiator, which is baffled, affords increased heating surface and unusually long fire travel. The maximum amount of useful heat is extracted from the products of combustion before gases reach the flue.

To the front of the shell is welded a steel burner pouch, in which is the opening for the burner blast tube. Since this burner pouch is a part of the heating element, assembly is simplified and the combustion chamber is permanently sealed.

Seams in the shell and radiator are welded leakproof. In the shell, the welding is supplemented by closely spaced rivets.

The inner casing, made of galvanized iron, surrounds the heating element and serves the dual purpose of bringing the air into close contact with heating element and of keeping the jacket cool.

Most of the air returned to the unit passes inside the inner casing through an opening directly opposite the blower outlet. A sufficient quantity of air from the blower however, is diverted to the space between the inner casing and jacket. The air travels upward, joins the heated air in the plenum, through a series of holes in the top of the inner casing.

In this manner, the surface of the inner casing is exposed to two currents of air; one moving within the inner casing, the other between the inner casing and jacket. As a result practically no heat is lost. Since the air circulating between the inner casing and jacket is of a low temperature the jacket remains relatively cool.

The jacket will blend and harmonize with the furnishings of any basement. All parts are die-cut and formed. Connected by interlocking slip-joints, assuring ease of assembly and air-tight seams. Jacket completely encases blower, motor, filters, heating element and oil burner. Finished in two-tone blue, suede texture.

Jacket door provides access to heating element and oil burner. Fire door has circular glass window for observing combustion.

Filters effectively remove dust, dirt and other foreign matter from the air. Large filter area is provided.

Provided with rubber mounted motor, which is specially designed for winter air conditioning installations. Quiet in operation.

Westmoreland air conditioner has heat Lib-O-Rator precast combustion chamber. Fits easily and snugly into place. The Arcoflame oil burner is regularly furnished with this model.

Saratoga air conditioner has jacket partition located between radiator and shell. Causes all return air to pass over radiator before entering warm air chamber. Greater efficiency results due to the heat from the radiator being utilized before the hot gases pass up the flue. Available with or without the Arcoflame burner.

Saratoga—Capacities and Dimensions

No.	Burner No.	Recom. Nozzle Size Gal.	Cap. BTU. at Register	*Air Volume CFM.	Blower No.	Motor Hp.	Filter No. and Size In.	Overall Width In.	†Overall Depth In.	Compartment Height, In. Heating	Compartment Height, In. Blower	Air Discharge Open. In.	Air Intake Open. In.	Floor to Ctr. Flue Outlet In.	Flue Vent Diam. In.	Chimney Flue Size In.	Chimney Flue Ht. In.	Approx. Ship. Wt., Lb. With Burner	Approx. Ship. Wt., Lb. Less Burner
1120-F	MS	1.25	95,000	800–1100	1–10½	¼	2–16x25	35	§64½	61	..	22x22	24 x20	26	8	8x 8	25	1096	892

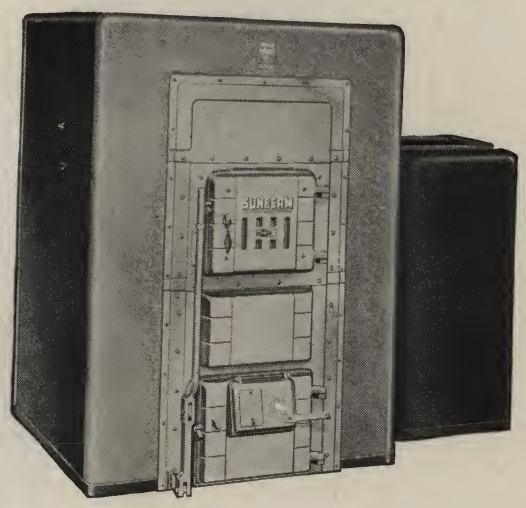
Westmoreland—Capacities and Dimensions

No.	Burner No.	Recom. Nozzle Size Gal.	Cap. BTU. at Register	*Air Volume CFM.	Blower No.	Motor Hp.	Filter No. and Size In.	Overall Width In.	†Overall Depth In.	Compartment Height, In. Heating	Compartment Height, In. Blower	Air Discharge Open. In.	Air Intake Open. In.	Floor to Ctr. Flue Outlet In.	Flue Vent Diam. In.	Chimney Flue Size In.	Chimney Flue Ht. In.	Approx. Ship. Wt., Lb. With Burner	Approx. Ship. Wt., Lb. Less Burner
1120–9	C1S	1.25	95,000	700– 950	1–9	¼	1–20x25	‡55½	52¼	58	35	20x20	14½x26½	24¼	8	8x 8	25	1178	908
1120–12	C1S	1.25	100,000	1000–1600	1–12	¼	2–16x25	‡60½	52¼	58	41	20x20	19½x25½	24¼	8	8x 8	25	1225	962
1124	C1S	1.5	150,000	1500–2400	1–15	⅓	4–16x20	‡71	59	58	46	24x24	21½x38½	17⅜	8	8x 8	25	1545	1217
1127	C1S	2.0	200,000	2000–3500	1–18	½	5–16x25	‡84⅜	57⅝	61	41	28x28	20 x51⅛	26 7/16	9	8x12	30	1949	1596
1134–18–½	C1SX	2.5	240,000	2400–3600	1–18	½	5–16x25	‡94⅜	68⅝	68	41	32x32	20 x51⅛	32 3/16	10	8x12	30	2244	1891
1134–18–¾	L1S	3.0	285,000	2800–3800	1–18	¾	5–16x25	‡94⅜	68⅝	68	41	32x32	20 x51⅛	32 3/16	10	8x12	30	2276	1904
1134–21–¾	L1S	3.5	330,000	3200–5000	1–21	¾	6–16x25	‡100½	68⅝	68	51¼	32x32	24 x55	32 3/16	10	8x12	30	2418	2046

*Available air volume in ample sized ducts. †Allow 2 feet in front for opening of doors.
‡Allow 2 feet at side of blower compartment for removal and replacement of filters.
§Allow 2 feet at rear of unit for removal of filters and for servicing of motor.

Allerton Sunbeam Winter Air Conditioners

Oil Fired—Coal, Hand or Stoker Fired



Has galvanized iron inner casing that serves a dual purpose. It brings return air in close contact with the heating element, and keeps the jacket cool.

Shell is constructed of No. 8 gage boiler plate, riveted and welded. Construction of shell eliminates two vertical joints within the warm air chamber.

Gun type oil burning model, has mineral wool supplied for insulating the space between the front casting and shell. Insulation is supported and kept in place by a horizontal plate and a liner of heat-resisting steel.

Rotary type oil burning model, has a hearth plate which rests on a cast iron ring held in position by brackets and sealed with asbestos rope. Sides of the heating element have an inner lining of special heat-resisting steel.

Coal fired model has fire box that is 13½ inches high. Holds a deep bed of fuel; provides economy of fuel consumption and slow, complete combustion. Hand fired model has grate assembly that is revolved easily by upright shaker handle; ashes sift through grate and clinkers settle into basket. Stoker fired model has clinker disposal pouch; hot clinkers are dropped into ash pit through an opening in the feed section plate.

Jacket is finished in two-tone blue.

No.	Capacities at Register, BTU. Hand Fired Soft Coal	Hand Fired Hd. Coal or Coke	Stoker Fired Coal	Oil Fired	*Air Volume CFM.	Wheel Blower No.	Wheel Diam. In.
D-5522-9	101,500	88,750	95,000	95,000	700– 950	D-1-9	9
D-5522-12	110,900	88,750	119,450	109,000	800–1500	D-1-12	12
D-5524	130,900	104,700	140,950	128,550	1000–1600	D-1-12	12
D-5527	157,400	125,900	169,500	154,600	1300–1700	D-1-12	12

No.	Motor Hp.	Filter No. and Size In.	†Overall Width In.	Ht. Heating Compartment In.	Blower Compartment Inches Ht.	Blower Compartment Inches Width	Overall Depth In.
D-5522-9	¼	1–20x25	60	58	35	18	43
D-5522-12	¼	2–16x25	65	58	41	23	43
D-5524	¼	2–16x25	68	58	41	23	46
D-5527	⅓	2–16x25	70	61	41	23	48¼

No.	Air Discharge Open. In.	Air Intake Open. In.	Smoke Collar Diam. In.	Floor to Ctr. Smoke Collar In.	Recom. Chimney Flue Size In.	Recom. Chimney Flue Ht. Ft.	Approx. Ship. Wt. Lb.
D-5522-9	22x22	14½x26½	8	20⅞	8x12	30	1291
D-5522-12	22x22	19½x25½	8	20⅞	8x12	30	1327
D-5524	23x23	19½x25½	8	20⅞	8x12	30	1415
D-5527	24x24	19½x25½	9	22⅞	12x12	35	1571

*Available air volume in ample size ducts.
†Allow clearance at side equal to width of blower compartment for removal of filters, blower, and motor.

Mohawk Sunbeam Winter Air Conditioners

Gas Fired

Provides automatic air-conditioning in small, medium and large homes. Its special ribbon-type burner assures a satin-smooth, uniform flame that is economical and efficient.

Lower fuel consumption and extra efficiency are achieved with this unit because return air from the living quarters is preheated before it enters the heating compartment. Finned radiators in some sizes and cast iron collars in others are placed in the return air compartment. These radiators or collars are warmed by the hot gases on their way to the flue. The return air from the rooms passes over these radiators or collars and receives a preliminary heating. It is then filtered, and enters the heating compartment.

Heating element is made in two sections of durable cast iron. The faces of both sections are precision ground and packed with asbestos wicking to form a leakproof joint.

Burner is made of cast iron with high temperature alloy, corrugated ribbons. Burns natural, manufactured, mixed or bottled gas.

Efficient blowers of a large capacity are the double inlet type. The twin blowers on five largest sizes operate on a single shaft from a single motor.

Draft hood fits flush with jacket and is concealed in compartment in rear. Inner lining keeps jacket cool, prevents heat loss and brings circulating air into contact with heating surfaces.

Jacket is made of steel, and finished in two-tone blue, with suede texture.

No.	A.G.A. BTU. Input per Hr.	Cap. at Register BTU.	*Air Volume CFM.	No. of Burners	No. of Sections	Gas Supply Tapping In.	Diam. Flue Outlet In.	Floor to Ctr. Draft Hood Outlet In.
†K-60	60,000	43,200	400– 750	1	1	½	4	56
†K-80	80,000	57,600	550–1000	2	2	½	5	58
K-100	100,000	72,000	600–1100	2	2	‡½	6	49¾
K-120	120,000	86,400	750–1500	2	2	¾	6	49¾
K-150	150,000	108,000	1000–1900	3	3	‡¾	7	49¼
K-180	180,000	129,600	1100–2100	3	3	‡¾	7	49¼
K-200	200,000	144,000	1250–2300	4	4	1	8	48¾
K-240	240,000	172,800	1500–2900	4	4	‡1	8	48¾
†K-300	300,000	216,000	1900–3200	5	5	‡1	9	54½

No.	Width In.	Depth In.	Ht. In.	Air Discharge Opening In.	Air Intake Opening In.	Blowers No. and Size In.	Motor Hp.	Filters No. and Size In.
K-60	21	44⅝	55¾	14x14	12x14	1– 9	⅙	2–10x20
K-80	27	51⅜	55¾	14x22	12x22	1–10½	¼	2–16x25
K-100	27	51⅜	55¾	14x22	12x22	1–10½	¼	2–16x25
K-120	27	51⅜	55¾	14x22	12x22	1–12	⅓	2–16x25
K-150	41¼	51⅜	55¾	14x36	14x36	2–10½	⅓	4–16x20
K-180	41¼	51⅜	55¾	14x36	14x36	2–10½	⅓	4–16x20
K-200	50	51⅜	55¾	14x44	14x44	2–10½	½	4–16x25
K-240	50	51⅜	55¾	14x44	14x44	2–12	½	4–16x25
K-300	60	51⅜	55¾	14x52	14x52	2–12	¾	6–16x20

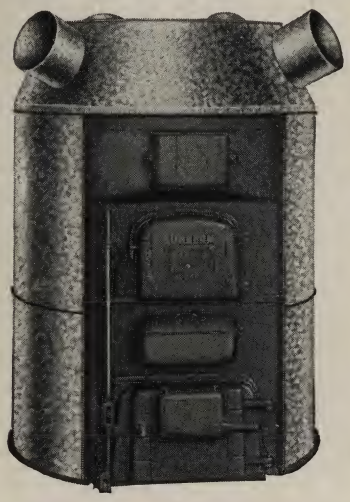
*Available air volume in ample size ducts.

†With top outlets on draft hood. Dimension refers to distance from floor to top of outlet.

‡For manufactured gas.

Kenwood Sunbeam Warm-Air Furnaces

Has smoke collar cast with radiator; extends outside of casing. The radiator can be revolved to any position for convenient connection to flue.



Radiator is cast in one piece. Design incorporates oversize capacity for the hot gases; yet gives a maximum of air circulating space.

Clean-out collar is cast with radiator. Cover bolts over large opening effecting gas-tight connection.

Upper front slips in place over and around feed section, eliminating possibility of gas leakage from feed section into warm-air chamber.

Combustion chamber and feed section have opening at top centered above fire pot. Feed section is short. Feed door and opening are machine-ground.

Lower front slips in place over and around ash pit section. Dust from ash pit cannot enter warm-air chamber.

Two-piece fire pot is made of heavyweight cast iron, with extra deep cup joints. Extra large vapor pan is located where it will evaporate necessary moisture.

Duplex grate has more free area than ordinary grates. Upright shaker revolves outer ring on four large wheels. Prevents ash accumulation against fire pot walls.

Ash pit is high and spacious. Full width opening makes removal of ashes easy. Door and door openings, machine ground.

Standard equipment includes check draft, finishing collars, poker, draft regulator, chain and pulleys, asbestos cement, nuts and bolts.

No.	Grate Area Sq. Ft.	Heat. Surface Sq. In.	Ratings Sq. In.	Cap. at Register BTU. per Hr.	I.D. Fire Pot In.	Diam. Smoke Collar In.	Floor to Ctr. Smoke Collar In.
1018CD	1.22	4274	334	45,400	18	8	40½
1040CD	1.49	5126	405	55,100	20	8	46 1/16
1044CD	1.90	5874	492	66,900	22	9	45¾
1048CD	2.29	6598	578	78,600	24	9	45¾
1052CD	2.82	7494	689	93,700	26	10	49¼
1056CD	3.34	8256	794	108,000	28	10	49¼
30C	3.69	9986	907	123,400	30	9	56

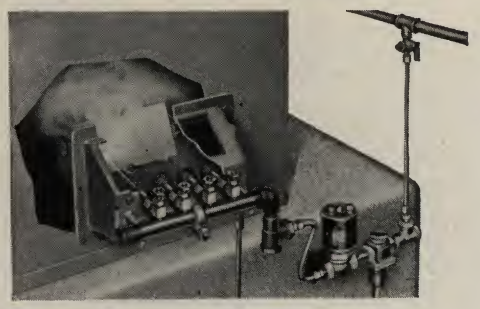
No.	Req. Cellar Ht. to Btm. of Joist Ft.	Size Feed Door In.	Size Ash Pit Door In.	Ht. Ash Pit In.	Diam. Casing In.	Ht. Casings and Pitch Hood In	Ht. Lower Sec. of Casing In.
1018CD	6	9 x11½	16 x12⅛	13	36	59½	21
1040CD	6	10½x13½	17 x12	12	40	65½	23
1044CD	6	10½x13½	19¾x12	12	44	65½	23
1048CD	6	10½x13½	19¾x12	12	47	65½	23
1052CD	6½	10½x13½	21¾x13½	13½	52	69½	25
1056CD	7	10½x13½	21¾x13½	13½	56	69½	25
*30C	8	13 x13¼	10½x21½	14	60	76¼	20

No.	Ht. Upper Sec. of Casing In.	Circum. of Top Casing Ring In.	Over-all Lgth. Casing Sheets In.	Recom. Chimney Flue Size In.	Recom. Chimney Flue Ht. In.	Approx. Ship. Wt., Lb. Less Casings	Approx. Ship. Wt., Lb. Complete
1018CD	24	113⅛	88	8x 8	25	716	770
1040CD	28	125⅝	100	8x 8	25	881	954
1044CD	28	138¼	110⅜	8x 8	30	1008	1087
1048CD	28	147⅝	118¾	8x12	30	1149	1233
1052CD	30	163⅜	132⅛	8x12	30	1440	1539
1056CD	30	175 15/16	145⅝	8x12	30	1568	1686
*30C	20	188½	153¼	8x12	35	1964	2118

*A two-piece radiator with bolt-on fronts.

Sunbeam Automatic Spray Type Humidifiers

For Winter Air Conditioners



Designed for installation in the plenum chamber of a winter air conditioner, and is automatically controlled by a room humidistat.

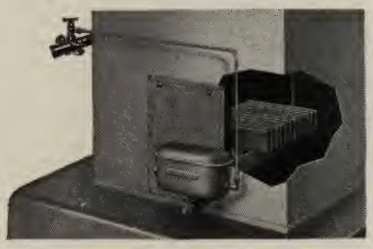
Operates on the principle of breaking up the water into a fine spray and thus making it easier for the air to absorb the moisture. The amount of water atomized can be adjusted by changing the position of the atomizing plate.

Equipped with four nozzles. If one nozzle clogs, it is turned off and the next one turned on until all are clogged. All four nozzles are then cleaned at one time.

Complete information upon request.

Sunbeam Automatic Float Type Humidifiers

For Winter Air Conditioners



This humidifier comes complete with all parts necessary for installation in the plenum chamber of winter air conditioners.

A series of ceramic plates set in the pan increase the evaporating surface. The ceramic plates are of the highest quality, large pored and well spaced to assure positive evaporation. The evaporator pan and the ceramic plate holder are porcelain enameled inside and out to guard against oxidization and assure easy cleaning.

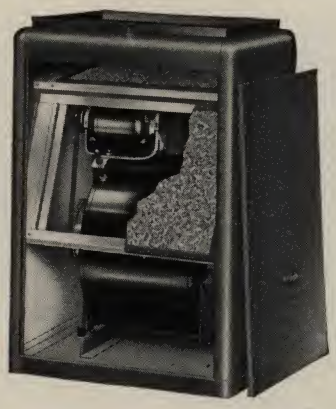
Each size pan is supplied with a certain number of ceramic plates as standard equipment, but is so designed that more plates may be added at a slight additional charge should the owner desire more humidity.

Complete information upon request.

Special Bulletins

It is impossible to list in complete detail all lines of standard material, but we will gladly furnish special catalogs, bulletins and prices upon request, covering lines not fully described nor shown in this catalog.

Sunbeam Blower-Filter Units



An easy, quick and inexpensive way to modernize warm air furnaces—with Sunbeam Blower-Filter Units.

This scientifically made unit can be attached to any type of furnace. In winter it aids furnace to deliver a positive and uniform circulation of warm, filtered air to every room—and without forcing the fire, or consuming more fuel. In summer, unit supplies ventilation by circulating the air, night or day.

Has scientifically engineered and die-formed inlet. This makes the wheel opening 99 per cent effective in admitting air.

Wheel openings without this construction are frequently less than 80 per cent effective.

Die-formed and forward curved, each precision blade handles the same, correctly proportioned amount of air. Assures quiet, smooth operation.

Self-aligning bearing socket, keeps bearings in alignment at all times, thereby reducing bearing wear, and power consumption.

Wheel revolves within a small fraction of an inch of the housing, so that entering air is drawn immediately into the blades and turbulence and friction are eliminated. Each wheel is statically and dynamically balanced so it will revolve evenly and will not touch housing.

Welded housing provides a smooth surface that will not set up any avoidable resistance to the flow of air.

Extra heavy shafts and bearing have large capacity oil reservoirs. Oil reservoir holds several months' supply of lubrication.

Cut-off at discharge outlet, provides even distribution of the air at all points of the outlet.

Sides of blower wheels and slots where blades attach are die-formed to insure perfect alignment so important to quiet, noise-free operation. Blades are riveted to sides of wheel so they cannot come loose or rattle.

Heavy duty motor is specially designed for furnace blower installations. Will not cause radio interference; quiet in operation.

All parts of the heavy gage cabinet are die cut and formed. Slip joints eliminate the use of screws and provide snug-fitting, air-tight connections. Placid blue finish, suede texture.

No.	Diameter Blower Wheel Inches	Pitch Diameter Blower Pulley Inches	No. of Blowers	Motor Hp.	Motor RPM.	Filters Number and Size Inches	Width Inches	Height Inches	Depth Inches	Air Discharge Opening, Inches Width	Air Discharge Opening, Inches Height	Return Air Opening Inches
D-1-9	9¼	9	1	¼	1725	1—20x25	30	35	18	10 15/16	9 9/16	14½x26½
D-1-10½	10½	9	1	¼	1725	2—16x20	25	36	22	12¾	11⅛	18½x21½
D-1-12	12	12	1	¼	1725	2—16x25	29	41	23	14 9/16	12 9/16	19½x25½
D-1-15	15	15	1	⅓	1725	4—16x20	42	46	25	18⅛	15 9/16	21½x38½
1-18F	18	18	1	½	1725	5—16x25	54⅝	41	36⅜	24 9/16	18⅝	20 x51⅛
1-21F	21	18	1	¾	1725	6—16x25	58½	51¼	42½	28¾	21⅝	24 x55

Capacity Table

No. D-1-9

Volume CFM.	Outlet Velocity FPM.	*⅛-Inch RPM.	*⅛-Inch Motor Hp.	*¼-Inch RPM.	*¼-Inch Motor Hp.	*⅜-Inch RPM.	*⅜-Inch Motor Hp.	*½-Inch RPM.	*½-Inch Motor Hp.	*⅝-Inch RPM.	*⅝-Inch Motor Hp.
445	600	582	⅙	...	..	...	..	...	..	....	..
520	700	590	⅙	...	..	...	..	...	..	....	..
593	800	597	⅙	714	⅙	...	..	...	..	....	..
667	900	612	⅙	725	⅙	828	⅙	...	..	....	..
742	1000	630	⅙	735	⅙	833	⅙	928	¼	1002	¼
810	1100	651	⅙	752	⅙	843	¼	930	¼	1012	¼
890	1200	672	⅙	766	⅙	855	¼	938	¼	1020	⅓
965	1300	696	⅙	789	¼	872	¼	953	¼	1028	⅓

No. D-1-10½

Volume CFM.	Outlet Velocity FPM.	*⅛-Inch RPM.	*⅛-Inch Motor Hp.	*¼-Inch RPM.	*¼-Inch Motor Hp.	*⅜-Inch RPM.	*⅜-Inch Motor Hp.	*½-Inch RPM.	*½-Inch Motor Hp.	*⅝-Inch RPM.	*⅝-Inch Motor Hp.
578	600	476	⅙	...	..	...	..	...	..	....	..
675	700	477	⅙	...	..	...	..	...	..	....	..
778	800	480	⅙	578	⅙	...	..	...	..	....	..
865	900	489	⅙	582	⅙	670	⅙	...	..	....	..
964	1000	507	⅙	591	⅙	672	¼	742	¼	....	..
1061	1100	522	⅙	599	⅙	676	¼	750	¼	819	⅓
1155	1200	542	⅙	615	¼	688	¼	756	¼	824	⅓
1252	1300	563	⅙	634	¼	698	¼	764	⅓	828	⅓

No. D-1-12

Volume CFM.	Outlet Velocity FPM.	*⅛-Inch RPM.	*⅛-Inch Motor Hp.	*¼-Inch RPM.	*¼-Inch Motor Hp.	*⅜-Inch RPM.	*⅜-Inch Motor Hp.	*½-Inch RPM.	*½-Inch Motor Hp.	*⅝-Inch RPM.	*⅝-Inch Motor Hp.
756	600	416	⅙	...	..	...	..	...	..	....	..
882	700	417	⅙	...	..	...	..	...	..	....	..
1008	800	420	⅙	506	⅙	...	..	...	..	....	..
1132	900	428	⅙	508	⅙	586	½	...	..	....	..
1260	1000	443	⅙	517	¼	588	¼	649	¼	....	..
1386	1100	457	⅙	524	¼	592	¼	656	⅓	717	½
1512	1200	474	¼	538	¼	602	⅓	661	⅓	721	½
1638	1300	493	¼	554	¼	611	⅓	668	½	724	½

No. D-1-15

Volume CFM.	Outlet Velocity FPM.	*⅛-Inch RPM.	*⅛-Inch Motor Hp.	*¼-Inch RPM.	*¼-Inch Motor Hp.	*⅜-Inch RPM.	*⅜-Inch Motor Hp.	*½-Inch RPM.	*½-Inch Motor Hp.	*⅝-Inch RPM.	*⅝-Inch Motor Hp.
1180	600	333	¼	...	..	...	..	...	...	...	...
1380	700	334	¼	...	..	...	..	...	...	...	...
1590	800	336	¼	405	¼	...	..	...	...	...	...
1770	900	343	¼	407	¼	469	⅓	...	...	...	...
1970	1000	354	¼	413	⅓	471	⅓	519	½	...	...
2140	1100	366	¼	419	⅓	474	½	525	½	574	½
2370	1200	379	⅓	430	½	482	½	529	½	577	¾
2560	1300	395	⅓	443	½	489	½	535	½	579	¾
2760	1400	410	½	456	½	497	½	542	¾	585	¾

No. 1-18F

Volume CFM.	Outlet Velocity FPM.	*⅛-Inch RPM.	*⅛-Inch Motor Hp.	*¼-Inch RPM.	*¼-Inch Motor Hp.	*⅜-Inch RPM.	*⅜-Inch Motor Hp.	*½-Inch RPM.	*½-Inch Motor Hp.	*⅝-Inch RPM.	*⅝-Inch Motor Hp.
1880	600	296	¼	359	⅓	...	..	...	...	...	...
2200	700	299	¼	365	⅓	412	½	...	...	...	...
2510	800	306	⅓	367	½	418	½	463	½	507	¾
2830	900	309	⅓	370	½	426	½	466	¾	510	¾
3140	1000	314	⅓	380	½	428	¾	469	¾	512	1
3450	1100	322	½	382	½	430	¾	471	¾	514	1
3770	1200	328	½	384	¾	434	¾	474	1	518	1
4080	1300	334	½	390	¾	438	¾	481	1	524	1½

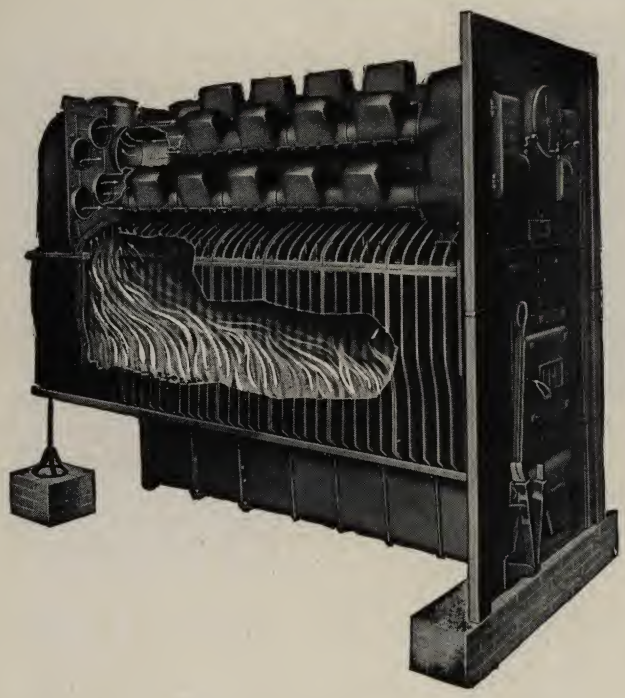
No. 1-21F

Volume CFM.	Outlet Velocity FPM.	*⅛-Inch RPM.	*⅛-Inch Motor Hp.	*¼-Inch RPM.	*¼-Inch Motor Hp.	*⅜-Inch RPM.	*⅜-Inch Motor Hp.	*½-Inch RPM.	*½-Inch Motor Hp.	*⅝-Inch RPM.	*⅝-Inch Motor Hp.
2570	600	254	⅓	307	½	...	..	...	...	...	...
3000	700	256	⅓	313	½	353	½	...	...	...	...
3425	800	262	⅓	315	½	359	¾	397	¾	434	1
3850	900	264	½	318	½	366	¾	399	1	437	1
4280	1000	269	½	325	¾	367	¾	402	1	439	1½
4700	1100	275	½	327	¾	369	1	404	1	441	1½
5130	1200	281	¾	329	1	372	1	407	1½	444	1½
5550	1300	287	¾	335	1	375	1	412	1½	448	1½

*Duct resistance in inches of water column; allows for internal resistance of heating unit itself.

NOTE: Using capacities below underscorings may result in noise being encountered.

National System of Conditioned Air Heating



An ideal warm air heating and ventilating system designed specifically for schools, churches, auditoriums and other types of large buildings.

Adaptable for hand-fired coal, stokers, gas or oil fired heating systems.

Automatic control of temperature, humidity and air circulation. The air is first cleaned as it passes through the filters. A quiet, positive pressure blower forces the air over the heater and then moisture is absorbed from the automatic humidifier. The conditioned air is then distributed through the duct system and introduced into the various rooms.

A complete line of units are manufactured to assure the specification of proper size and capacity for each individual requirement.

Steel casings are also available. Designed in easily assembled sections, accurately fitted with efficient insulation and attractively finished.

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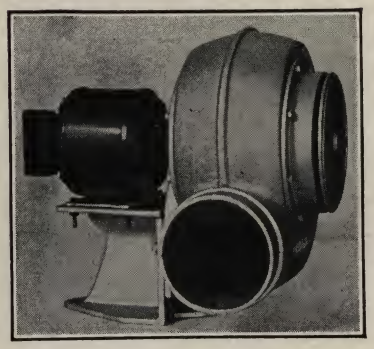
Write or Phone for Further Information and Prices

G-B-C Automatic FireTender



A mechanical draft unit with limit controls. Assures steady, comfortable, and healthful room temperature. Cuts down fuel bills, utilizing full heat value of coal.

Provides ideal volume and velocity of draft, according to size of heater, and size and quantity of coal burned.

Limit controls operate automatically to manage fire, eliminating frequent tending.

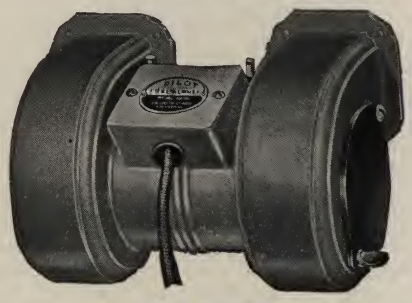
Multi-blade fan provides exactly the required velocity of air to overcome resistance of grate, fuel bed, and duct system. Fan is balanced statically as well as dynamically to prevent undue wear and assure quietness.

Induction type motors, a.c. 110 volts, 60 cycle.

No.	Each	Hp.	Diameter Wheel Inches	Size Outlet Inches	Revolutions per Minute	For Grate Surface Sq. Ft.
M-00	**$11.55**	....	3	2⅞	2800	0 to 3
M-400	**16.50**	....	4½	3½	1600	0 to 5
M-SP0	**26.50**	1/30	4½	4	1600	0 to 6
M-0	**34.10**	1/6	4½	4	1725	0 to 6
M-1	**41.80**	1/6	6	5	1725	6 to 14
M-1¼	**55.00**	¼	7½	6	1725	15 to 22
M-1¼	**64.00**	1/6	7½	6	1150	8 to 15
M-1½	**121.00**	½	9	7¼	1725	22 to 34
M-1½	**106.00**	¼	9	7¼	1150	14 to 20
M-1¾	**130.00**	½	10½	10½	1150	27 to 40

Prices and specifications for other voltages, frequencies, and larger sizes on request.

Pilot Automatic Coal Burners
Forced Draft



No. BT-2040

An automatically controlled forced draft unit which permits the use of the cheaper Rice and Buckwheat grades of coal.

Furnished with Minneapolis-Honeywell thermostat and Pilot induction type motor for 110 volts, 60 cycles, a.c. only.

No. BT-2040—Twin

Fits 95 per cent of all household heating plants. Also small commercial plants.

Capacity: furnace firepot diameters, 23 to 30 inches; boiler grate areas, 3 to 8 square feet. Watts, 55; cfm., 150.
No. BT-**2040**, with Thermostat.....each **$33.50**

No. BT-1040—Single

For small heating plants, up to 22 inches in diameter, hot water supply boilers, large kitchen ranges.

Capacity: furnace firepot diameters, 18 to 22 inches; boiler grate areas, up to 3 square feet. Watts, 33; cfm., 75.
No. BT-**1040**, with Thermostat.....each **$28.50**

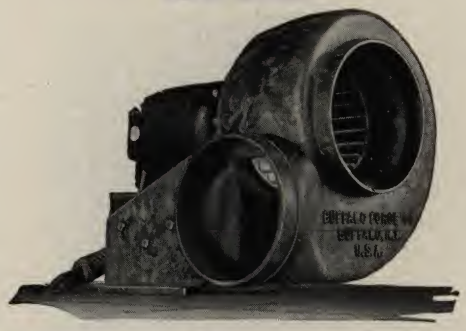
No. BT-900—Single

For large homes, stores, garages, apartments, schools, and commercial use. Specify controls desired.

Capacity: furnace firepot diameters, over 30 inches; boiler grate areas, 9 to 16 square feet. Watts, 60; cfm., 210.
No. BT-**900**, with Thermostat.....each **$45.00**

Buffalo Baby Conoidal Fans

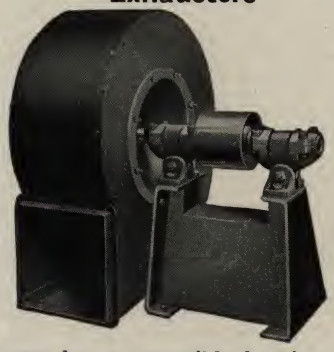
Motor Driven



A high efficiency multiblade type fan. Excellent for all kinds of drying and cooling purposes, for supplying fresh, cool air to offices, homes, staterooms, telephone booths, etc., and for exhausting smoke, fumes and foul air from kitchens, restaurants, lavatories, etc. The housing is cast iron and can be swung around to discharge in any desired direction. It furnishes a large volume of air at a relatively low pressure with moderate speed. The wheel is accurately balanced, assuring a smooth running, noiseless machine.

No.	A.C. Each	Speed RPM.	Free Del. Cu. Ft. Air per Min.	Hp. Motor	Outlet In.	Height Inches	Ship. Wt., Lb.
1	$33.00	1725	98	1/20	3	8 3/16	40
2	36.00	1725	227	1/12	4	10 17/32	55
2½	42.00	1725	606	1/6	6½	13⅝	90
3	52.00	1725	950	1/4	7½	15 3/32	125
3	60.00	1140	625	1/6	7½	15 3/32	125
3½	On Application	1725	1900	1	9	18 13/16	300
3½	On Application	1440	1560	3/4	9	18 13/16	300
3½	On Application	1150	1245	1/3	9	18 13/16	300
3½	On Application	870	945	1/6	9	18 13/16	300
Duplex Wheel	On Application	1750	1175	1/4	9	18 13/16	300
	On Application	1440	967	1/6	9	18 13/16	300
	On Application	1150	722	1/8	9	18 13/16	300

Buffalo Standard Reversible Single Exhausters



This exhauster has a reversible housing; adjustable to either hand and to any direction of discharge.

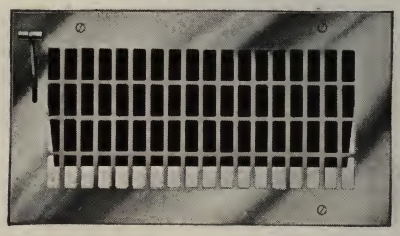
All adjustments are made on the outside of the housing. To change the direction of discharge just loosen the eight bolts in the ring of each pedestal; then revolve the housing until the discharge points in the desired direction. To change the hand remove these bolts, loosen the set screw holding the fan to the shaft, then shift pedestals. This operation is quickly and easily done. The advantages of this fan are self-evident. One fan will meet any requirement, no matter what the hand or discharge.

Size Inches	Diam. Inlet Inches	Size Outlet Inches	Single Fan Pulley Inches	Width Fan Inches	Weight Pounds
25	10	9½x 9½	5x 4	29 9/16	210
30	12	11¼x11¼	6x 4½	32 3/16	255
35	14	12¾x12¾	7x 5½	34 15/16	300
40	16	14¼x14¼	8x 6	38 13/16	420
45	18	16¼x16¼	9x 6	44 3/16	650
50	20	18¼x18¼	10x 7	47 7/16	725
55	22	19⅞x19⅞	11x 7½	51 7/16	980
60	24	21⅜x21⅜	12x 8½	53 15/16	1200

Prices upon application.

No. 311 T & B Economair Sidewall Registers

For Air Conditioning



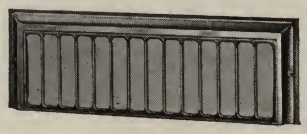
Free area, 69 per cent; effective area, 84 per cent. Perforated rectangular mesh, ⅜x⅞-inch openings, ⅛-inch frets. Furnished only with the standard lever operated single-valve damper. Made of No. 18 gage steel with the outer edges formed for additional rigidity.

Size Stack-head, Width x Height Inches	Frame No. 1: Black Japan, Prime Coat Each	White, Japan, Oak, Lacquered Finishes Each	* Electro-plated Finishes Each	Size Stack-head, Width x Height Inches	Frame No. 1: Black Japan, Prime Coat Each	White, Japan, Oak, Lacquered Finishes Each	* Electro-plated Finishes Each
6x4	$1.30	$1.45	$2.10	14x4	$1.50	$1.65	$2.40
8x4	1.30	1.45	2.10	14x5	1.60	1.80	2.65
8x5	1.35	1.50	2.20	14x6	1.75	1.95	2.85
8x6	1.40	1.60	2.30	14x8	1.90	2.10	3.10
10x4	1.35	1.50	2.20	24x4	2.05	2.25	3.30
10x5	1.40	1.60	2.30	24x5	2.15	2.40	3.50
10x6	1.50	1.65	2.40	24x6	2.55	2.85	4.20
10x8	1.60	1.80	2.65	30x4	2.50	2.80	4.05
12x4	1.40	1.60	2.30	30x5	2.70	3.00	4.40
12x5	1.55	1.75	2.55	30x6	3.10	3.45	5.05
12x6	1.60	1.80	2.65	30x8	3.50	3.90	5.70
12x8	1.75	1.95	2.85	....	....	....	....

*Electroplated finishes cover brass, statuary bronze, nickel, oxidized copper and cadmium.

For chromium-plated or sanded finishes, prices on request.

No. 15 T & B Baseboard Intakes



A return air intake designed for installation on face of baseboard. Margin is formed to simulate molding.

Size to Fit Opening, Width x Height Inches	Free Area Square Inches	Black Japan Prime Coat Plain Steel Each	White Japan Oak Lacquered Finishes Each	Electroplated: Oxidized Copper, Nickel Brass, Bronze Each	Electroplated: Chromium Sanded Finishes Each
14x4	46	$1.00	$1.40	$2.00	$2.40
30x4	98	2.15	3.00	4.60	5.00

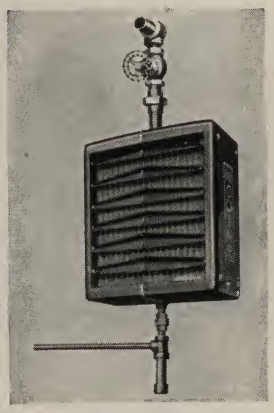
FURNACE PIPE AND FITTINGS

In this catalogue we have not attempted to make a complete showing of the furnace pipe and fittings, registers, etc., which we have to offer.

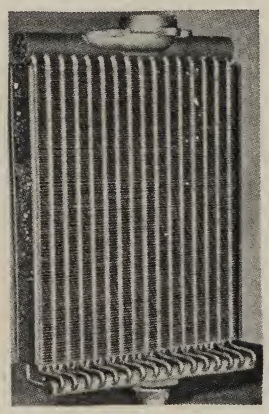
We carry a complete stock of warm air heating equipment and supplies.

Special catalogues and prices will be furnished upon request.

Modine Unit Heaters



No Brackets, Pipe Rods, etc. Necessary



Modine Unit Heater Condenser

The Modine Unit Heater for steam or hot water industrial and commercial heating, and process drying, assures effective and economical distribution of heat.

CONSTRUCTION:—Heating element is constructed entirely of copper and copper alloys. Heating element tubes are of heavy gauge, seamless red brass to which sturdy copper fins are metallically bonded, assuring a permanent joint, headers of heavy copper pipe.

FEATURES:—The Modine Unit Heater incorporates such features as (1) quietness of operation, accomplished by an acoustically-treated, sound silenced casing, scientific fan shroud design and vibration dissipators, (2) safety fan guard that is an integral part of the design, (3) protection against rust by Bonderizing, (4) modern design, (5) improved heating performance. In addition to these five features the Modine Unit Heater retains its patented features, direct from pipe line suspension and the expansion bend.

All Modine Steam Unit Heaters are guaranteed for 150 pounds saturated steam; all Modine Hot Water Unit Heaters are guaranteed for 150 pounds hydrostatic pressure per square inch.

Model No. Steam Units	Replaces Square Feet of Cast Iron Radiation	Delivers Btu. per Hour at 60° Air 2 Lb. Steam	Cubic Feet of Air per Minute	Weight Pounds of Unit Uncrated
2030	2030	487,200	7720	446
1610	1610	386,400	5920	395
1380	1380	331,000	4960	270
1200	1200	288,000	4120	199
1050	1050	252,000	3500	199
904	904	217,000	3370	158
808	808	193,920	2760	158
711	711	170,500	2430	144
606	606	145,400	2440	144
514	514	123,500	2250	133
414	414	99,300	1770	95
362	362	86,900	1450	90
304	304	73,000	1290	89
252	252	60,500	980	84
206	206	49,300	843	84
172	172	41,300	661	52
140	140	33,600	540	47
104	104	25,000	350	47
74	74	17,800	296	22

Modine Unit Heaters are also available in eight sizes for hot water application, as follows: Models 112-W, 178-W, 277-W, 393-W, 548-W, 752-W, 974-W and 1280-W. Figures used to designate models indicate the number of square feet of cast iron radiation each replaces.

Modine Unit Heaters, both steam and hot water types, are available with variable speed motors.

Special catalog and prices sent upon request.

Modine Blast Heaters

This heater is used for heating, ventilating, air conditioning or special process or drying application. The expansion bend allows each tube to expand and contract as its temperature requires without affecting the tube adjacent to it. Expansion is absorbed by the adjustments of angle in the bends or curves of the tubes, instead of being transmitted directly to the headers. This feature permits use of heater with safety on fluctuating steam temperatures corresponding with pressures up to 150 pounds.

All cylindrical steam carrying passages. Condenser is of copper or copper-alloy construction, from inlet boss to outlet boss. Copper fins are die-formed to increase heat transfer efficiency. Metallic bonding insures a permanent junction that remains intact even under high temperatures. Also prevents reduction of original heat transfer capacity. Steam distributing plate brazed into header rations steam evenly to all tubes, eliminating need for orificing. Sturdy steel casing contributes strength to blast heater and provides for easy and economical installation in any normal operating position. All external piping strain is absorbed by casing instead of being transmitted to copper condenser.

Casings are designed for duct installation, in end vertical, side vertical, or horizontal position. They are constructed of 12 and 14-gage steel channels, hot galvanized after fabrication.

The steam and condensate carrying tubes on all heaters are of pure seamless copper, ⅝-inch outside diameter. Manganese silicon bronze expansion-bends are brazed to the individual tubes. Tubes are spaced 1½-inch center to center along the face of the core and also 1½-inch in depth, when 2 rows of tubes are used.

All supply headers of heaters are heavy pure copper cylinders 2½ or 3 inches outside diameter, depending on heater size. Return headers are 2 inches outside diameter. To these headers the high pressure bronze inlet and outlet castings are brazed.

Guaranteed to withstand hydrostatic pressure up to 500 pounds per square inch or operating steam pressure or temperature corresponding to those of 150 pounds per square inch gage, saturated steam.

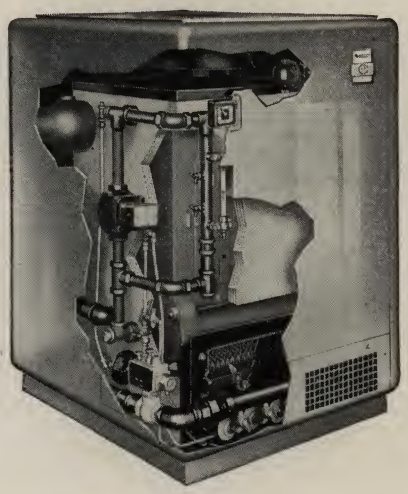
Made in 3 widths, 21¼, 29, and 37¾ inches; made in 13 lengths, ranging from 2 feet 8½ inches to 10 feet 8½ inches. All sizes are available in the 7 types.

*Type	**36**	**44**	**57**	**64**	**72**	**93**	**109**
Each	....	....	....	....	....	....	....
Rows of Tubes	1	1	1	1	1	2	2
No. of Fins	3	4	6	7	8	6	8

*Type Nos. designate final temperature based on entering air at 0°F., velocity of 500 f.p.m. and a steam pressure of 5 pounds. For example, Type 36 is a blast heater having a final air temperature of 36.4°F. at air velocity of 500 f.p.m., 0° entering air and 5 pounds steam pressure.

American Gas Boilers

Empire Model
For Steam or Hot Water



A gas boiler with scientifically designed features, accurate controls and enameled jacket.

All the benefits of automatic, care-free gas heating are provided by this boiler plus the economy effected by the thermotor throttling valve, which reduces the gas consumption gradually as the boiler temperature rises. Room temperatures are thus accurately maintained.

Made in a complete range of sizes for every type of home or building, with or without a basement; also for domestic hot water supply.

American Gas Boilers

Standard Model
For Steam or Hot Water

Gas valve is electrically operated from room thermostat. Steam pressure or water temperature throttles gas flow to maintain required conditions.

Low water cutout completely shuts off supply of gas to main burners if the water line on steam boiler reaches a low point. Quiet burners, raised drill ports, blue flame.

Thermostatic pilot is protected from moisture or dirt. Keeps gas supply valve closed unless pilot is burning. Venturi burner tube induces proper velocity to gas and primary air, and obtains the correct mixture.

Pintype cast iron section, heat-absorbing surface. Absorbs heat from rising columns of hot gases, and transfers this heat to the water within. Thick asbestos air-cell insulation prevents heat loss from boiler.

Jacket is attractively finished; and has black enamel trimming.

Ratings on Empire and Standard Gas-Fired Boilers

Empire Boilers

Steam				Water					
	A.G.A.				A.G.A.	*Supplies Installed			
No.	Rating Sq. Ft.	*Supplies Installed Radiation Sq. Ft.	Approx. Ship. Wt. Lb.	No.	Rating Sq. Ft.	Sq.Ft. 150 Btu.	Sq.Ft. 200 Btu.	Approx. Ship. Wt. Lb.
0-GS- 4-E	255	163	600	1-GA - 4-E	210	135	101	301
0-GS- 5-E	340	219	700	1-GA - 5-E	280	179	134	347
0-GS- 6-E	425	275	800	1-GA - 6-E	350	224	168	384
0-GS- 7-E	510	332	910	1-GA - 7-E	420	269	202	450
1-GS- 4-E	610	400	1280	2-GA - 4-E	420	269	202	419
1-GS- 5-E	775	513	1469	2-GA - 5-E	560	361	269	495
1-GS- 6-E	940	627	1651	2-GA - 6-E	700	454	341	567
1-GS- 7-E	1105	743	1849	2-GA - 7-E	840	548	411	642
1-GS- 8-E	1270	859	2038					
1-GS- 9-E	1435	978	2246	4-GA - 8-E	980	643	482	760
1-GS-10-E	1600	1097	2438	4-GA - 9-E	1120	738	554	831
.....	....	....	....	4-GA -11-E	1400	931	698	991
.....	....	....	....	4-GA -13-E	1680	1126	845	1136
.....	....	....	....	1-GW- 4-E	980	643	482	1280
.....	....	....	....	1-GW 5-E	1240	820	615	1469
.....	....	....	....	1-GW- 6-E	1500	1000	750	1651
.....	....	....	....	1-GW- 7-E	1770	1190	893	1849
.....	....	....	....	1-GW- 8-E	2030	1373	1030	2038
.....	....	....	....	1-GW- 9-E	2300	1567	1175	2246
.....	....	....	....	1-GW-10-E	2560	1755	1316	2438
.....	....	....	....	.....	....	....	....	....
.....	....	....	....	.....	....	....	....	....
.....	....	....	....	.....	....	....	....	....
.....	....	....	....	.....	....	....	....	....

*Ratings listed under "Supplies Installed" include a suitable allowance for normal piping and pick-ups. This rating is shown computed on the basis of 150 Btu. and 200 Btu. per square foot per hour omission for water boilers and 240 Btu. per square foot per hour for steam boilers.

Standard Boilers

Steam				Water					
	A.G.A.				A.G.A.	*Supplies Installed			
No.	Rating Sq. Ft.	*Supplies Installed Radiation Sq. Ft.	Approx. Ship. Wt. Lb.	No.	Rating Sq. Ft.	Sq.Ft. 150 Btu.	Sq.Ft. 200 Btu.	Approx. Ship. Wt. Lb.
1-GS- 4	610	400	1098	1-GA - 4	210	135	101	290
1-GS- 5	775	513	1282	1-GA - 5	280	179	134	335
1-GS- 6	940	627	1474	1-GA - 6	350	224	168	380
1-GS- 7	1105	743	1678	2-GA - 4	420	269	202	420
1-GS- 8	1270	859	1856	2-GA - 5	560	361	269	490
1-GS- 9	1435	978	2075	2-GA - 6	700	454	341	560
1-GS-10	1600	1097	2268	2-GA - 7	840	548	411	630
1-GS-11	1765	1217	2457	4-GA - 8	980	643	482	700
				4-GA - 9	1120	738	554	820
4-GS- 6	2000	1391	3080	4-GA -11	1400	931	698	960
4-GS- 7	2400	1690	3451	4-GW-13	1680	1126	845	1140
4-GS- 8	2800	1994	3867	1-GW- 4	980	643	482	1098
4-GS- 9	3200	2302	4262	1-GW- 5	1240	820	615	1282
4-GS-10	3600	2612	4640	1-GW- 6	1500	1000	750	1474
4-GS-11	4000	2924	5031	1-GW- 7	1770	1190	893	1678
4-GS-13	4800	3553	6403	1-GW- 8	2030	1373	1030	1856
4-GS-15	5600	4167	7181	1-GW- 9	2300	1567	1175	2075
4-GS-17	6400	4762	8000	1-GW-10	2560	1755	1316	2268
				1-GW-11	2820	1945	1459	2457
4-GS-19	7200	5357	8798					
4-GS-21	8000	5952	9543	4-GW- 6	3200	2225	1669	3080
4-GS-22	8400	6250	11140	4-GW- 7	3840	2704	2028	3451
4-GS-25	9600	7143	12470	4-GW- 8	4480	3191	2393	3867
4-GS-28	10800	8036	13790	4-GW- 9	5120	3683	2762	4262
4-GS-31	12000	8929	15130	4-GW-10	5760	4180	3135	4640
4-GS-33	12800	9524	16300	4-GW-11	6400	4678	3509	5031
4-GS-37	14400	10714	18100	4-GW-13	7680	5685	4264	6403
4-GS-41	16000	11905	20000	4-GW-15	8960	6667	5000	7181
				4-GW-17	10240	7619	5714	8000
				4-GW-19	11520	8571	6428	8798
				4-GW-21	12800	9524	7143	9543
				4-GW-22	13440	10000	7500	11140
.....	.....	.....	.....	4-GW-25	15360	11429	8572	12470
.....	.....	.....	.....	4-GW-28	17280	12857	9643	13790
.....	.....	.....	.....	4-GW-31	19200	14286	10715	15130
.....	.....	.....	.....	4-GW-33	20480	15238	11429	16300
.....	.....	.....	.....	4-GW-37	23040	17143	12857	18100
.....	.....	.....	.....	4-GW-41	25600	19048	14286	20000

Severn Boilers

Hand, Oil or Stoker Fired

Internal construction of this boiler is scientifically correct and properly balanced to assure more than average heating power, quick heat-making and low operating cost. Unique refinements and improvements are included for extra convenience and labor-saving. Because of special care and ingenuity in designing, this boiler is adapted for hand firing and automatic firing with oil, gas or stoker. Highly efficient performance with any good burner or stoker can be expected. Oil burners may be installed in front or rear, and, due to special openings provided, stokers can operate from front or either side.

Made for small to medium sized homes.

Boiler has a thick layer of air cell asbestos insulation between the jacket and boiler. This effectively prevents heat loss, saves fuel and helps to keep jacket cool.

Jacket finished in canyon red and doors are streamlined.

When specified, boiler can be equipped with a Biltin Taco Tank or Tankless Type Water Heater at small extra cost, which will supply abundant hot water for domestic use while heating system is in operation. Oil and stoker models can also have similar heaters for supplying all year-round hot water, by use of Taco-Abbott System.

Ideal Redflash Boilers

Hand-Fired Coal

Made in sectional design with long flue gallery through which gases of combustion must travel before escaping, a distance twice the boiler's length. Has an unusually quick pickup capacity, insuring quick heating. Functions with exceptionally high efficiency.

Interposed between the attractive cabinet exterior and the boiler is a heavy layer of indestructible asbestocel insulation to reduce radiation heat loss.

Mechanical regulation is provided on all steam boilers and on water boilers of the 2 Series, with slight extra cost for water boilers of 3, 4, and 5 Series.

Severn Boilers

Hand, Oil, Gas or Stoker Fired
Specifications and Dimensions

*Hand-Fired

Steam			Water			No. & Size Tappings (Inches)	
No.	Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.	No.	Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.	Flow	Return
S-17	350	1222	W-17	560	1213	1-3,1-4	2-3
S-21	450	1396	W-21	720	1387	1-3,1-4	2-3
S-25	550	1494	W-25	880	1485	1-3,1-4	2-3
S-29	630	1666	W-29	1010	1657	1-3,1-4	2-3
S-33	710	1782	W-33	1140	1773	1-3,1-4	2-3
S-37	780	1926	W-37	1250	1917	1-3,2-4	2-3

†Stoker-Fired

Steam			Water			No. & Size Tappings (Inches)	
No.	Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.	No.	Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.	Flow	Return
SC-17	400	1037	WC-17	640	1033	1-3,1-4	2-3
SC-21	460	1198	WC-21	740	1194	1-3,1-4	2-3
SC-25	520	1280	WC-25	830	1276	1-3,1-4	2-3
SC-29	600	1437	WC-29	960	1433	1-3,1-4	2-3
SC-33	690	1529	WC-33	1100	1525	1-3,1-4	2-3
SC-37	780	1660	WC-37	1250	1656	1-3,2-4	2-3

‡‡Oil-Fired

Steam			Water			No. & Size Tappings (Inches)	
No.	Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.	No.	Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.	Flow	Return
S-17-0	400	1037	W-17-0	640	1033	1-3,1-4	2-3
S-21-0	460	1194	W-21-0	740	1190	1-3,1-4	2-3
S-25-0	520	1271	W-25-0	830	1267	1-3,1-4	2-3
S-29-0	600	1411	W-29-0	960	1407	1-3,1-4	2-3
S-33-0	690	1514	W-33-0	1100	1510	1-3,1-4	2-3
S-37-0	780	1639	W-37-0	1250	1635	1-3,2-4	2-3

‡‡Oil-Burning Unit

Steam			Water				No. & Size Tappings (Inches)	
No.	Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.	No.	Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.	Recom. Nozzle Size GPH.	Flow	Return
S-17-OB	400	1262	W-17-OB	640	1262	1.5	1-3,1-4	2-3
S-21-OB	460	1433	W-21-OB	740	1433	1.75	1-3,1-4	2-3
S-25-OB	520	1512	W-25-OB	830	1512	2.0	1-3,1-4	2-3
S-29-OB	600	1652	W-29-OB	960	1652	2.25	1-3,1-4	2-3
S-33-OB	690	1757	W-33-OB	1100	1757	2.50	1-3,1-4	2-3
S-37-OB	780	1882	W-37-OB	1250	1882	2.75	1-3,2-4	2-3

*Can be furnished with No. 702 Biltin Taco Heater of 40 gallons capacity or No. 703 Biltin Taco Heater of 100 gallons capacity. Biltin Taco Heater capacities based upon minimum water temperature of 212°F.

‡Furnished with flush jacket only.

†Available with No. 703 Biltin Taco Heater which has a capacity of 66 gallons based upon minimum boiler water temperature of 180°F. and permits installation of the Taco-Abbott System for year-round hot water supply. Can also be furnished with No. 590 Biltin Taco Tankless Heater which has a capacity of 210 gallons based upon minimum boiler water temperature of 180°F. and permits installation of Taco-Abbott system for year-round hot water supply.

Ratings

Boiler ratings are based on net installed radiation, (240 Btu. per square foot for steam and 150 Btu. per square foot for hot water). Allowances have been made in the ratings for normal piping (covered) and pick-up loads.

Allowances have also been provided in ratings for normal domestic hot water supply.

Oil and Stoker Fired.—When domestic hot water supply heaters (either external or Biltin type) are installed, add 1 square foot per gallon of tank capacity to installed radiation on steam boilers and 2 square feet per gallon of tank capacity on water boilers before selecting boiler size.

When Biltin Tankless Heater is installed, add 50 square feet steam radiation per bathroom or 80 square feet water radiation per bathroom to installed radiation before selecting boiler size. Tankless type water heater is not recommended for use in localities where there is an excessive amount of lime in the water, except where provision is made for regularly cleaning heater. Use of storage tank containing integral heating unit is recommended in hard water areas.

Ideal Redflash Boilers

Hand-Fired Coal

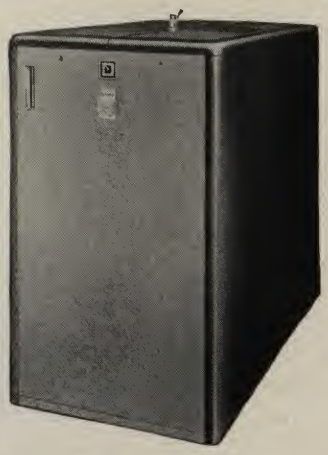
Steam								Water									
	*Installed Rad.	No. & Size Tappings Inches				Approx. Shipping Wt. Lb.			*Installed Rad.	No. & Size Tappings Inches			Approx. Shipping Wt. Lb.		Grate Area		
No.	Sq. Ft.	Outlet	Inlet	Water Line In.	Ht. In.	Jacketed	Unjacketed	No.	sq. Ft.	Outlet	Inlet	Ht. In.	Jacketed	Unjacketed	Sq. Ft.	Lgth. In.	Width In.
2-S- 6	770	2—4	2—4	50¼	57¼	1964	1839	2-W- 6	1230	2—4	2—4	57¼	1959	1834	4.39	30	35¾
2-S- 7	940	2—4	2—4	50¼	57¼	2247	2113	2-W- 7	1505	2—4	2—4	57¼	2242	2108	5.28	35	35¾
2-S- 8	1110	2—4	2—4	50¼	57¼	2414	2268	2-W- 8	1775	2—4	2—4	57¼	2409	2263	6.17	40	35¾
2-S- 9	1280	2—4	2—4	50¼	57¼	2703	2537	2-W- 9	2050	2—4	2—4	57¼	2697	2531	7.06	45	35¾
2-S-10	1450	2—4	2—4	50¼	57¼	2910	2732	2-W-10	2320	2—4	2—4	57¼	2904	2726	7.95	50	35¾
2-S-11	1620	3—4	2—4	50¼	57¼	3188	2994	2-W-11	2590	3—4	2—4	57¼	3182	2988	8.84	55	35¾
3-S- 6	1500	2—4	2—5	53½	63	3411	3227	3-W- 6	2400	2—4	2—5	63	3397	3213	6.65	36	45¾
3-S- 7	1800	3—4	2—5	53½	63	3878	3671	3-W- 7	2880	3—4	2—5	63	3864	3657	8.00	42	45¾
3-S- 8	2100	3—4	2—5	53½	63	4284	4079	3-W- 8	3360	3—4	2—5	63	4269	4064	9.35	48	45¾
3-S- 9	2400	4—4	2—5	53½	63	4735	4512	3-W- 9	3840	4—4	2—5	63	4720	4497	10.70	54	45¾
3-S-10	2700	4—4	2—5	53½	63	5196	4948	3-W-10	4320	4—4	2—5	63	5181	4933	12.05	60	45¾
3-S-11	3000	4—4	2—5	53½	63	5666	5395	3-W-11	4800	4—4	2—5	63	5651	5380	13.40	66	45¾
3-S-12	3300	5—4	2—5	53½	63	6098	5803	3-W-12	5280	5—4	2—5	63	6083	5788	14.75	72	45¾
3-S-13	3600	5—4	2—5	53½	63	6557	6248	3-W-13	5760	5—4	2—5	63	6542	6233	16.10	78	45¾
4-S- 7	3000	3—4	2—6	55½	65	5233	4995	4-W- 7	4800	3—4	2—6	65	5219	4981	11.70	49	53¾
4-S- 8	3500	3—4	2—6	55½	65	5839	5582	4-W- 8	5600	3—4	2—6	65	5825	5568	13.68	56	53¾
4-S- 9	4000	4—4	2—6	55½	65	6436	6157	4-W- 9	6400	4—4	2—6	65	6421	6142	15.66	63	53¾
4-S-10	4500	4—4	2—6	55½	65	7046	6742	4-W-10	7200	4—4	2—6	65	7031	6727	17.64	70	53¾
4-S-11	5000	5—4	2—6	55½	65	7676	7351	4-W-11	8000	5—4	2—6	65	7661	7336	19.62	77	53¾
4-S-12	5500	5—4	2—6	55½	65	8283	7938	4-W-12	8800	5—4	2—6	65	8268	7923	21.60	84	53¾
4-S-13	6000	6—4	2—6	55½	65	8913	8534	4-W-13	9600	6—4	2—6	65	8898	8519	23.58	91	53¾
5-S- 8	5000	3—5	2—6	59½	71	8340	8013	5-W- 8	8000	3—5	2—6	71	8325	7998	18.83	64	63
5-S- 9	5700	4—5	2—6	59½	71	9283	8927	5-W- 9	9120	4—5	2—6	71	9268	8912	21.52	72	63
5-S-10	6400	4—5	2—6	59½	71	10197	9805	5-W-10	10240	4—5	2—6	71	10174	9782	24.21	80	63
5-S-11	7100	5—5	2—6	59½	71	11101	10703	5-W-11	11360	5—5	2—6	71	11078	10680	26.90	88	63
5-S-12	7800	5—5	2—6	59½	71	12081	11653	5-W-12	12480	5—5	2—6	71	12066	11638	21.52	96	63
5-S-13	8500	5—5	2—6	59½	71	13018	12560	5-W-13	13600	5—5	2—6	71	12995	12537	24.21	104	63
5-S-14	9200	6—5	2—6	59½	71	13823	13331	5-W-14	14720	6—5	2—6	71	13800	13308	24.21	112	63
5-S-15	9900	6—5	2—6	59½	71	14719	14199	5-W-15	15840	6—5	2—6	71	14696	14176	26.90	120	63

*Boiler ratings are based on net installed radiation (240 Btu. per square foot for steam and 150 Btu. per square foot for hot water). Allowances have been made in the ratings for normal piping (covered) and pick-up loads. Sufficient radiation must be installed for the requirements of the building.

When domestic hot water supply heaters are installed, add 1 square foot per gallon of tank capacity to installed radiation on steam boilers, 2 square feet per gallon of tank capacity on water boilers, before selecting boiler size. Sufficient radiation must be installed for building requirements.

Oakmont Oil Boilers

Oil Firing—For Steam or Hot Water



Firebox is scientifically designed to provide clean, complete combustion of oil and quick heating response. Boiler operates as a unit with any standard oil burner.

Streamlined, attractively finished steel jacket conceals burner, controls, water heater, smokehood, etc. Heavy, indestructible, corrugated air cell asbestos underneath jacket prevents heat waste.

Finned surfaces are especially designed to extract the maximum amount of heat from hot gases as they pass to chimney.

When specified, Biltin Taco water heater, 40 to 100-gallon capacity, provides year-round domestic hot water by use of Taco-Abbott system. Tankless heaters are also available as optional equipment at additional cost.

Further Information and Prices on Request

Oakmont Oil Boilers

Ratings and Dimensions

Oil Firing—For Steam or Hot Water

Furnished with extended jacket only.

No. 598 Biltin Taco heater furnished when specified. Has a capacity of 40 gallons based upon minimum boiler water temperature of 180°F., and permits installation of the Taco-Abbott system for year-round hot water supply. Larger capacities as well as Tankless Type Heaters are available on special order.

Steam			Water			No. & Size Tappings Inches	
No.	*Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.	No.	*Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.	Outlet	Inlet
S-84	390	1142	W-84	625	1141	1—3	2—3
S-85	480	1297	W-85	770	1296	1—3	2—3
S-86	560	1377	W-86	895	1376	2—3	2—3
S-87	640	1533	W-87	1025	1531	2—3	2—3
S-88	730	1637	W-88	1170	1635	2—3	2—3
S-89	810	1796	W-89	1295	1793	2—3	2—3

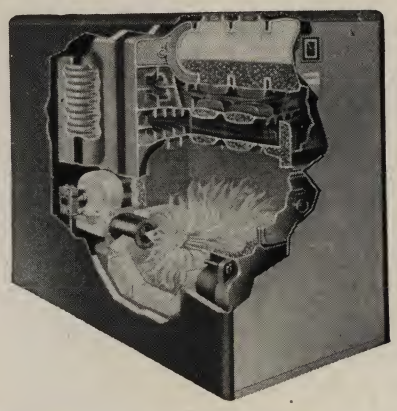
*Boiler ratings are based on net installed radiation (240 Btu. per square foot for steam and 150 Btu. per square foot for hot water). Allowances have been made in the ratings for normal piping (covered) and pickup loads.

When domestic hot water supply heaters are installed, add 1 square foot per gallon of tank capacity to installed radiation on steam boilers and 2 square feet per gallon on water boilers before selecting boiler size.

When Biltin tankless heater is installed, add 50 square feet steam radiation per bathroom or 80 square feet water radiation per bathroom to installed radiation before selecting boiler size. Tankless type water heater is not recommended for use in localities where there is an excessive amount of lime in the water, except where provision is made for regularly cleaning heater. Use of storage tank containing integral heating unit is recommended in hard water areas.

Oakmont Oil Heating Units

Oil Firing—For Steam or Hot Water



Especially designed for efficient burning of oil. Equipped with special flange model Arcoflame oil burner which meets the needs of small to average size homes.

Fire chamber is correctly proportioned to eliminate fuel waste. Finned flue surfaces extract maximum heat from hot gases as they pass to chimney.

A heavy layer of thick corrugated air cell asbestos insulation underneath the jacket reduces heat loss and keeps jacket surface cool. Handsome steel jacket conceals burner, controls, water heater, smokehood, etc.

When specified, Biltin Taco water heater, 40 to 100-gallon capacity, provides year-round domestic hot water by use of Taco-Abbott system. Tankless heaters are also available as optional equipment at additional cost.

Further Information and Prices on Request

Oakmont Oil Heating Units

Ratings and Dimensions

Oil Firing—For Steam or Hot Water

Furnished with extended jacket only. Heat Lib-O-Rator molded refractory combustion chamber unless otherwise specified. Has 9-inch draft stabilizer; No. CF-112 Arcoflame burner, flange mounted; and No. CA-701 Arcoflame stack control.

The steam heating unit has No. 369 low water cutoff and No. 11 Arcoflame control set consisting of No. 450-BA-1 pressure control and No. 411-CH thermostat and nozzle. The water heating unit has No. 13 Arcoflame control set consisting of No. 254-H immersion limit control and No. 411-CH thermostat and nozzle.

No. 598 Biltin Taco heater is included in price. Has a capacity of 40 gallons based upon minimum boiler water temperature of 180°F., and permits installation of the Taco-Abbott system for year-round hot water supply. Larger size tank and tankless type heaters are available and will be furnished on special order.

Steam			Water			Recommended Nozzle Size GPH.	No. & Size Tappings Inches	
No.	*Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.	No.	*Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.		Outlet	Inlet
S-84-OB	390	1389	W-84-OB	625	1389	1.50	1—3	2—3
S-85-OB	480	1555	W-85-OB	770	1555	1.65	1—3	2—3
S-86-OB	560	1645	W-86-OB	895	1645	2.00	2—3	2—3
S-87-OB	640	1806	W-87-OB	1025	1806	2.25	2—3	2—3
S-88-OB	730	1910	W-88-OB	1170	1910	2.50	2—3	2—3
S-89-OB	810	2069	W-89-OB	1295	2069	2.75	2—3	2—3

*Boiler ratings are based on net installed radiation (240 Btu. per sq. ft. for steam and 150 Btu. per sq. ft. for hot water). Allowances have been made in the ratings for normal piping (covered) and pickup loads.

When domestic hot water supply heaters are installed, add 1 square foot per gallon of tank capacity to installed radiation on steam boilers and 2 square feet per gallon on water boilers before selecting boiler size.

When Biltin tankless heater is installed, add 50 square feet steam radiation per bathroom or 80 square feet water radiation per bathroom to installed radiation before selecting boiler size. Tankless type water heater is not recommended for use in localities where there is an excessive amount of lime in the water, except where provision is made for regularly cleaning heater. Use of storage tank is recommended in hard water areas.

Arcoliner Boilers

For All Fuels—Automatic or Hand Fired

Unjacketed

Jacketed

An efficient, economical boiler for small homes. Effective heating surfaces are correctly proportioned for maximum heat absorption.

Combustion chamber scientifically designed for complete, economical burning of any fuel. Has two-pass finned flue surfaces. Large steam space assures dry steam for quick, noiseless heating.

Sturdily built grates; and tight joints. Extra large nipple connections at top assure balanced internal circulation.

Boiler jacket extends to floor. Thoroughly insulated to prevent heat loss and to keep jacket cool. Finished in two-tone red. Built in Water Heater available for domestic hot water, at slight extra cost.

Boiler sections are shipped assembled.

Further Information and Prices on Request

Arcoliner Boilers

Unjacketed and Jacketed

Dimensions

Floor to Top	inches	51⅝
Floor to Water Line (Steam Boiler)	inches	44⅜
Floor to Center Line of Smoke Pipe	inches	38⅝
Floor to Ctr. of Water Heater Tapping	inches	33⅛
Floor to Crown of Boiler	inches	32½
Floor to Grate Line	inches	9¾
Width Overall	inches	21⅞
Width of Grates	inches	13⅞
Width of Firebox	inches	15

Coal Ratings—Hand Fired

Boiler No.		*Installed Radiation Sq. Ft.		Chimney		No. and Size Tappings, In.	
Steam	Water	Steam	Water	Size In.	Ht. Ft.	Flow	Return
S-153-D	W-153-D	180	290	8x 8	20	1–3	1–3
S-154-D	W-154-D	270	430	8x 8	25	1–3	1–3
S-155-D	W-155-D	370	590	8x 8	30	2–3	1–3
S-156-D	W-156-D	460	740	8x12	35	2–3	1–3
Oil Ratings—Automatic Fired							
S-153-DO	W-153-DO	230	370	8x 8	20	1–3	1–3
S-154-DO	W-154-DO	300	480	8x 8	20	1–3	1–3
S-155-DO	W-155-DO	370	590	8x 8	20	2–3	1–3
S-156-DO	W-156-DO	440	705	8x12	30	2–3	1–3
Stoker Ratings—Automatic Fired							
S-CD-154	W-CD-154	300	480	8x 8	20	1–3	1–3
S-CD-155	W-CD-155	370	590	8x 8	20	2–3	1–3
S-CD-156	W-CD-156	440	705	8x 8	25	2–3	1–3

*Boiler ratings are based on net installed radiation (240 Btu. per square foot for steam, and 150 Btu. per square foot for hot water). Allowances have been made in the ratings for normal piping (covered) and pick-up loads. Sufficient radiation must be installed for the requirements of the building.

When domestic hot water supply heater is installed, add 1 square foot per gallon of tank capacity to installed radiation on steam boilers and 2 square feet per gallon of tank capacity on water boilers before selecting boiler size.

Arcola Hot Water Boilers

For Coal or Oil

Unjacketed

Circulating Jacket

Designed especially for small homes and buildings, with or without a basement.

Well-proportioned flues, adequate heating surface, ample waterways and large fuel capacity assure economical fuel burning and rapid circulation of heat.

Available in three styles: unjacketed; with circulating jacket; or with insulated jacket. The unjacketed model is for either basement or room installation. The circulating type is for installation on same floor as the radiators. The insulated jacket is for basement installation. All types give dependable service and comfortable warmth.

Automatic heat regulator, at extra cost, controls the fire and helps maintain desired temperature.

All contacting surfaces of doors and sections are ground to smooth finish to prevent dust and air leakage.

Further Information and Prices on Request

Arcola Hot Water Boilers

Ratings and Dimensions

Boilers have 1 inlet, 2½-inch I.P.S., and 2 outlets, 2-inch I.P.S.

Unjacketed

Coal—Hand Fired				Oil Burning						
No.	*Installed Rad. Sq. Ft.	Radiating Surface Sq. Ft.	Approx. Ship. Wt. Lb.	No.	*Installed Rad. Sq. Ft.	Radiating Surface Sq. Ft.	Approx. Ship. Wt. Lb.	Lgth. In.	Ht. In.	Width In.
4-A	120	45	438	.....	...	..	...	12	44⅛	17
5-A	170	50	501	5-A-Oil	150	50	463	15	44⅛	17
6-A	220	55	571	6-A-Oil	200	55	524	18	44⅛	17
7-A	270	60	640	7-A-Oil	250	60	587	21	44⅛	17
8-A	320	65	706	8-A-Oil	300	65	649	24	44⅛	17
9-A	370	70	778	9-A-Oil	350	70	711	27	44⅛	17
10-A	420	75	850	10-A-Oil	400	75	773	30	44⅛	17

With Circulating Jacket

Ratings for Arcola boilers with insulated jacket same as with circulating jacket. When ordering, use suffix AI.

4-AJ	120	45	501	.....	...	..	...	15⅛	46⅝	18⅝
5-AJ	170	50	574	5-AJ-Oil	150	50	534	18⅛	46⅝	18⅝
6-AJ	220	55	648	6-AJ-Oil	200	55	599	21⅛	46⅝	18⅝
7-AJ	270	60	722	7-AJ-Oil	250	60	667	24⅛	46⅝	18⅝
8-AJ	320	65	793	8-AJ-Oil	300	65	734	27⅛	46⅝	18⅝
9-AJ	370	70	868	9-AJ-Oil	350	70	799	30⅛	46⅝	18⅝
10-AJ	420	75	937	10-AJ-Oil	400	75	853	33⅛	46⅝	18⅝

*Boiler ratings are based on net installed radiation (150 Btu. for hot water). Allowances have been made in ratings for normal piping (covered) and pickup loads. Sufficient radiation must be installed for the requirements of the building.

On hand-fired boilers, allowance has been provided in ratings for normal domestic hot water supply.

On automatically-fired boilers when domestic hot water supply is installed, add two square feet per gallon of tank capacity to installed radiation before selecting boiler size.

Ideal Water Tube Boilers

Oil Burning

An extensive series of carefully designed, water-backed vertical tubes assures proper water circulation and exposes an unusually large amount of heat-absorbing surface to the hot gases.

Correctly proportioned flues and a flue travel twice the boiler's length absorb every possible heat unit from the flue gases.

Large combustion chamber provides adequate space for complete burning of atomized oil.

Special oil burner installing plate, designed to insure neat, workmanlike installation, is supplied.

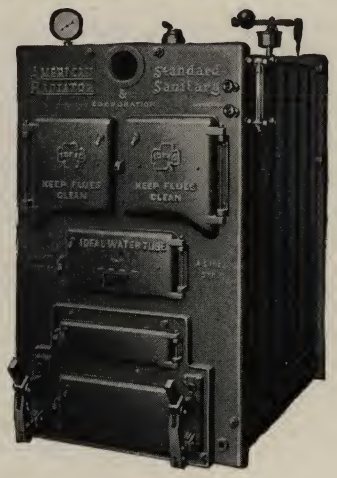
Steam			Water				
No.	*Installed Radiation Sq. Ft.	Approx. Ship. Wt. Lb.	No.	*Installed Radiation Sq. Ft.	Approx. Ship. Wt. Lb.	Length Inches	Height Inches
S-0623	650	1693	W-0623	1040	1686	25	53½
S-0723	770	1902	W-0723	1230	1895	29	53½
S-0823	910	2098	W-0823	1455	2091	33	53½
S-0923	1050	2307	W-0923	1680	2300	37	53½
S-1023	1190	2500	W-1023	1905	2493	41	53½
S-0629	1200	2885	W-0629	1920	2879	36	62
S-0729	1450	3243	W-0729	2320	3236	42	62
S-0829	1680	3601	W-0829	2690	3594	48	62
S-0929	1900	3995	W-0929	3040	3986	54	62
S-1029	2130	4380	W-1029	3410	4371	60	62
S-1129	2370	4770	W-1129	3790	4761	66	62
S-0736	2350	4495	W-0736	3760	4482	42	69
S-0836	2800	5044	W-0836	4480	5030	48	69
S-0936	3250	5567	W-0936	5200	5553	54	69
S-1036	3700	6106	W-1036	5920	6092	60	69
S-1136	4150	6658	W-1136	6640	6642	66	69
S-1236	4600	7216	W-1236	7360	7198	72	69
S-4808-O	4800	11664	W-4808-O	7680	11621	79¼	81¾
S-4809-O	5600	12964	W-4809-O	8960	12927	90	81¾
S-4810-O	6400	14310	W-4810-O	10240	14229	100¾	81¾
S-4811-O	7200	15621	W-4811-O	11520	15539	111½	81¾
S-4812-O	8000	16894	W-4812-O	12800	16805	122¼	81¾
S-4813-O	8800	18263	W-4813-O	14080	18190	133	81¾

*Boiler ratings are based on net installed radiation (240 Btu. per square foot for steam and 150 Btu. per square foot for hot water). Allowances have been made in the ratings for normal piping (covered) and pick-up loads.

When domestic hot water supply heaters are installed, add 1 square foot per gallon of tank capacity to installed radiation on steam boilers, 2 square feet per gallon of tank capacity on water boilers, before selecting boiler size. Sufficient radiation must be installed for the requirements of the building.

Ideal Water Tube Boilers

Anthracite Coal—Unjacketed



The contacting surfaces of the sections are machined. When a boiler is assembled, these smooth surfaces are drawn together, iron to iron, so that permanently gastight connections are insured.

Air cannot leak into the boiler, nor can gases escape or short circuit from the fire chamber to the chimney.

The gaseous products of combustion must travel a distance twice the length of the boiler; up and forward to the front, and up and back to the smokehood at the rear. This construction insures permanently high efficiency and cleanliness of operation.

Steam			Water				
No.	*Installed Radiation Sq. Ft.	Approx. Ship. Wt. Lb.	No.	*Installed Radiation Sq. Ft.	Approx. Ship. Wt. Lb.	Length Inches	Height Inches
S-2305	400	1633	W-2305	640	1615	21	53½
S-2306	500	1843	W-2306	800	1831	25	53½
S-2307	600	2090	W-2307	960	2078	29	53½
S-2308	700	2312	W-2308	1120	2298	33	53½
S-2309	800	2533	W-2309	1280	2519	37	53½
S-2310	900	2756	W-2310	1440	2742	41	53½
S-2905	800	2685	W-2905	1280	2670	30	62
S-2906	1000	3105	W-2906	1600	3090	36	62
S-2907	1200	3499	W-2907	1920	3484	42	62
S-2908	1400	3893	W-2908	2240	3878	48	62
S-2909	1600	4297	W-2909	2560	4280	54	62
S-2910	1800	4694	W-2910	2880	4677	60	62
S-3606	1600	4246	W-3606	2560	4229	36	69
S-3607	2000	4811	W-3607	3200	4797	42	69
S-3608	2400	5386	W-3608	3804	5371	48	69
S-3609	2800	5960	W-3609	4480	5945	54	69
S-3610	3200	6532	W-3610	5120	6517	60	69
S-3611	3600	7107	W-3611	5760	7091	66	69
S-3612	4000	7648	W-3612	6400	7635	72	69
S-3613	4400	8162	W-3613	7040	8149	78	69
S-3614	4800	8733	W-3614	7680	8720	84	69
S-3615	5200	9317	W-3615	8320	9304	90	69
S-4807	6000	11441	W-4807	9600	11375	68½	81
S-4808	7000	12910	W-4808	11200	12848	79¼	81
S-4809	7600	14483	W-4809	12160	14418	90	81
S-4810	8400	15991	W-4810	13440	15926	100¾	81
S-4811	9000	17370	W-4811	14400	17300	111½	81
S-4812	9600	18753	W-4812	15360	18680	122¼	81
S-4813	10400	20290	W-4813	16640	20219	133	81
S-4814	11000	21678	W-4814	17600	21613	143¾	81

*Boiler ratings are based on net installed radiation (240 Btu. per square foot for steam and 150 Btu. per square foot for hot water). Allowances have been made in the ratings for normal piping (covered) and pick-up loads.

When domestic hot water supply heaters are installed, add 1 square foot per gallon of tank capacity to installed radiation on steam boilers, 2 square feet per gallon of tank capacity on water boilers, before selecting boiler size. Sufficient radiation must be installed for the requirements of the building.

Ideal Water Tube Boilers

Stoker Firing—Unjacketed

Made in sizes suitable for any kind of building.

A series of water-backed vertical tubes presents an unusually large area of flue surface which extracts every possible heat unit from the hot gases as they travel to the chimney.

Has correctly proportioned combustion chamber and grate area. All contact faces of doors and sections are machine ground to a smooth finish to prevent air infiltration.

Equipped with relief valve which conforms to A.S.M.E. standards.

Steam			Water		
No.	*Installed Radiation Sq. Ft.	Approx. Ship. Wt. Lb.	No.	*Installed Radiation Sq. Ft.	Approx. Ship. Wt. Lb.
SC-23-T-6	650	1773	WC-23-T-6	1040	1766
SC-23-T-7	770	1985	WC-23-T-7	1230	1978
SC-23-T-8	910	2193	WC-23-T-8	1455	2186
SC-23-T-9	1050	2402	WC-23-T-9	1680	2395
SC-23-T-10	1190	2613	WC-23-T-10	1905	2606
SC-23-T-11	1330	2815	WC-23-T-11	2130	2807
SC-29-T-5	930	2593	WC-29-T-5	1490	2586
SC-29-T-6	1200	2981	WC-29-T-6	1920	2974
SC-29-T-7	1450	3367	WC-29-T-7	2320	3360
SC-29-T-8	1680	3753	WC-29-T-8	2690	3746
SC-29-T-9	1900	4149	WC-29-T-9	3040	4140
SC-29-T-10	2130	4534	WC-29-T-10	3410	4525
SC-29-T-11	2370	4900	WC-29-T-11	3790	4891
SC-29-T-12	2600	5283	WC-29-T-12	4160	5274
SC-36-T-6	1900	4022	WC-36-T-6	3040	4011
SC-36-T-7	2350	4563	WC-36-T-7	3760	4550
SC-36-T-8	2800	5115	WC-36-T-8	4480	5101
SC-36-T-9	3250	5666	WC-36-T-9	5200	5652
SC-36-T-10	3700	6210	WC-36-T-10	5920	6196
SC-36-T-11	4150	6766	WC-36-T-11	6640	6750
SC-36-T-12	4600	7296	WC-36-T-12	7360	7278
SC-4807	4600	10392	WC-4807	7360	10371
SC-4808	5400	11699	WC-4808	8640	11656
SC-4809	6200	13000	WC-4809	9920	12963
SC-4810	7000	14349	WC-4810	11200	14268
SC-4811	7800	15659	WC-4811	12480	15577
SC-4812	8600	16933	WC-4812	13760	16844
SC-4813	9400	18305	WC-4813	15040	18232

*Boiler ratings are based on net installed radiation (240 Btu. per square foot for steam and 150 Btu. per square foot for hot water). Allowances have been made in the ratings for normal piping (covered) and pickup loads.

When domestic hot water supply heaters are installed, add 1 square foot per gallon of tank capacity to installed radiation on steam boilers, 2 square feet per gallon of tank capacity on water boilers, before selecting boiler size. Sufficient radiation must be installed for the requirements of the building.

Ideal Arco Round Boilers

Coal Burning

Steam Boiler

A sturdy, dependable boiler, designed for utility and good heating performance. Provides quick, plentiful heat.

All steam boilers equipped with automatic regulation of dampers. Water boilers can be so equipped at a small additional cost.

Steam boilers have 1 outlet and 2 inlets; water boilers have 2 outlets and 2 inlets.

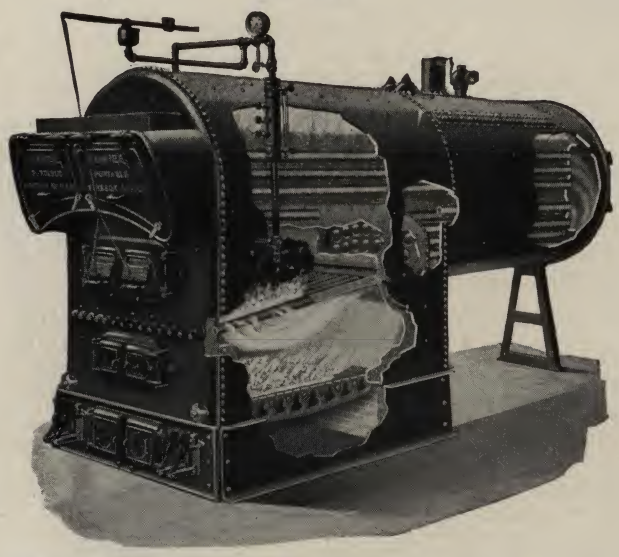
Hot Water Boiler

Steam				Water				
No.	*Installed Rad. Sq. Ft.	Water Line Inches	Approx. Ship. Wt. Lb.	No.	*Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.	Grate Area Sq. Ft.	Size Tappings In.
S-1704	200	47⅜	809	W-1704	320	707	1.4	2½
S-1705	220	51⅞	901	W-1705	350	801	1.4	2½
S-1904	275	44¼	874	W-1904	440	757	1.88	2½
S-1905	300	49¼	963	W-1905	480	846	1.88	2½
S-2004	330	45¾	916	W-2004	530	811	2.23	3
S-2005	360	50⅝	1014	W-2005	575	907	2.23	3
S-2204	380	45⅛	1091	W-2204	610	966	2.62	3
S-2205	440	51	1207	W-2205	705	1079	2.62	3
S-2504	500	47⅛	1259	W-2504	800	1105	3.53	3½
S-2505	580	52⅛	1414	W-2505	930	1265	3.53	3½

*Boiler ratings are based on net installed radiation (240 Btu. per square foot for steam and 150 Btu. per square foot for hot water). Allowances have been made in the ratings for normal piping (covered) and pick-up loads. When domestic hot water supply heaters are installed, add 1 square foot per gallon of tank capacity to installed radiation on steam boilers, 2 square feet per gallon of tank capacity on water boilers, before selecting boiler size. Sufficient radiation must be installed for the requirements of the building.

Series 300 Kewanee Down-Draft Smokeless Firebox Boilers

For Coal



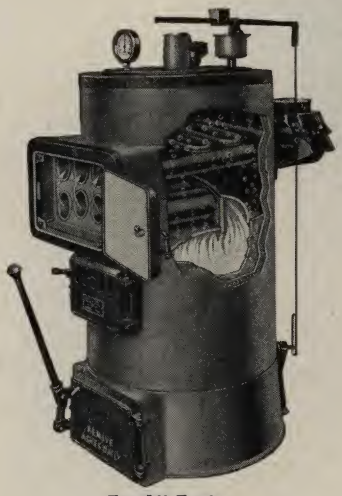
The Kewanee Smokeless Portable Firebox Heating Boiler is built of riveted steel. Any hand-fired coal is burnt smokelessly and with unequalled economy. The large water content is kept in more rapid circulation by the water grate.

This series conforms to the A.S.M.E. Boiler Code for construction 15 pounds, and for rating with the S.H.B.I. simplified practice recommendation. Also built for high pressures, 100, 125 and 150 pounds steam.

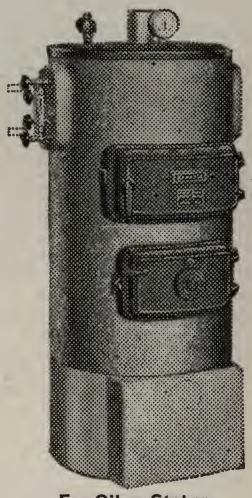
Prices and further information upon application.

Type R Kewanee Round Steel Boilers

With Round Jacket



For All Fuels



For Oil or Stoker

A residence boiler of substantial steel construction. Operates with equally high efficiency in steam, vapor, or hot water heating systems, using oil or gas for mechanical firing, and bituminous coal, coke or anthracite for stoker or hand firing.

A domestic hot water heating coil of 55 to 200 gallons per 3-hour heating capacity, as well as instantaneous flow coils, may be obtained at extra cost.

Simple one-piece steel welded construction. Two-pass tubes give economy of long gas travel with easy accessibility for instant cleaning. Spinner blades furnished when oil fired. Refractory insulated doors are ground to a gastight finish.

Complete Specifications and Prices on Request

Type R Kewanee Round Steel Boilers

Hand Fired

No. A-65 or larger hot water heating coils are available as regular equipment, at small extra cost.

Bituminous Coal No.	Anthracite Coal or Coke No.	Net Load Actual Radiators Plus Domestic Hot Water Square Feet Steam	Water	Approx. Shipping Weight Pounds
		Unjacketed		
734	2734	246	392	880
735	2735	320	512	1040
736	2736	423	677	1280
		With Round Jacket		
735-J	2735-J	320	512	1230
736-J	2736-J	423	677	1495

Oil or Stoker Fired

No. T-55 or T-66 hot water heating coil is available as regular equipment on Nos. 1733 and 0733. No. A-65 or larger hot water heating coil on all other sizes. All at extra cost.

Oil No.	Stoker No.	Net Load Actual Radiators Plus Domestic Hot Water Square Feet Steam	Water	Approx. Shipping Weight Pounds
		Unjacketed		
1733	0733	275	440	600
1734	0734	400	640	800
1735	0735	540	860	920
1736	0736	680	1090	1130
1737	....	900	1440	1400
		With Round Jacket		
1733-J	0733-J	275	440	700
1735-J	0735-J	540	860	1110
1736-J	0736-J	680	1090	1345

Kewanee Indirect Hot Water Heating Coils

For storage tank operation.

No. A-65. Rated capacity heated 40 to 140° in three hours in boiler water: at 212°F. is 65 gallons; at 180°F. is 40 gallons.

No. T-55. Rated capacity heated 40 to 140° in three hours in boiler water: at 212°F. is 55 gallons; at 180°F. is 35 gallons.

Data on larger coils available on request.

Kewanee Residence Type R Steel Boilers

With Steel Jacket

Type R boiler is of steel construction in the compacted style of heating unit. It is designed to serve the smaller kind of building such as garage, store, school, church, apartment, office, or residence.

Every kind of solid fuel, coke, all grades of soft or hard coals and their briquette or powdered forms are burned with success, also any liquid fuel oils, and natural or commercial gas can be used with high efficiency in this boiler.

Also furnished without insulated jacket.
Provision is made in all Type R boilers for installing Kewanee copper hot water coils.

Kewanee Water Heating Garbage Burners

Type D

This burner is easily operated. The fire is started on the lower or coal grates—for garbage destruction, the fire need not be heavy—fresh garbage is thrown into the upper chamber in quantities to completely fill it if necessary.

The smoke and burning gases pass around through a by-pass to the smoke exit, destroying the odors of the smouldering refuse. The by-pass causes the damp, or even wet, garbage to be quickly dried, so that it burns readily.

Type H

Each tube has a brass clean-out plug at the ends in the outer shell of the burner.

The burner is built to stand a working pressure of 125 pounds per square inch.

Lookout Vertical Boilers

With Full Length Tubes

For 100 Pounds Steam Working Pressure

Shell is vertical, having a firebox with water jacket. Contains vertical tubes 2 inches in diameter extending from crown sheet to top tube sheet for conveying products of combustion to the chimney or flue.

Tubes are of standard gauge and of best quality open-hearth steel, made in accordance with the A.S.M.E. Code.

Boilers 36 inches diameter and less have cast iron base, larger sizes have shell extended to form base.

Boilers 42 inches diameter and less have cast iron hood, larger sizes have sheet iron hood.

Regular equipment furnished consists of: Cast iron fire door frame with door and liner, cast iron base or shell extended with ash door, shaking grate bars, hand hole plates with bolts, arches and gaskets, steam gauge and syphon, gauge cocks, water gauge and glass, blowoff cock and nipple, pop safety valve, stack hood, and injector fitted with necessary globe and check valves.

Size	Boiler, In. Diam.	*Height	Firebox, In. Diam.	Height	Thickness, In. Tube Sheets	Shell	Fire-box	2-Inch Tubes No.	Lgth. In.
1½	20	45	16	20	⅜	¼	5/16	15	17
2	20	51	16	20	⅜	¼	5/16	19	23
3	20	57	16	20	⅜	¼	5/16	19	29
4	24	56	20	25	⅜	¼	5/16	28	23
5	24	68	20	25	⅜	¼	5/16	28	35
6	24	80	20	25	⅜	¼	5/16	28	47
8	30	69	24	27	⅜	¼	5/16	48	33
10	30	81	24	27	⅜	¼	5/16	48	45
12	30	95	24	27	⅜	¼	5/16	48	59
15	36	88	30	27	⅜	¼	11/32	68	51
20	36	106	30	27	⅜	¼	11/32	68	69
25	42	99	36	29	⅜	5/16	⅜	92	58
30	42	111	36	29	⅜	5/16	⅜	92	70
40	48	114	42	32	7/16	5/16	⅜	126	70
50	48	132	42	32	7/16	5/16	⅜	126	88

Size	Total Heating Surface Sq. Ft.	Size Steam Gauge In.	Pop Safety Valve In.	Size Blow-off In.	Size Feed Inlet In.	Size Steam Opening In.	Length Diam. Stack In.	Stack Recom. Feet	Approx. Ship. Wt. Lbs.
1½	18	4½	1	1	½	1	8	20	600
2	24	4½	1	1	½	1	8	20	650
3	29	4½	1	1	½	1	8	20	700
4	36	4½	1	1	½	1	10	20	900
5	50	4½	1	1	½	1	10	20	1050
6	63	4½	1	1	½	1	10	20	1150
8	76	4½	1	1	½	1¼	14	20	1500
10	99	4½	1	1	½	1¼	14	20	1700
12	126	4½	1¼	1	½	1¼	14	20	2000
15	156	4½	1½	1¼	¾	1½	16	25	2400
20	204	4½	1½	1¼	¾	1½	16	25	2900
25	235	4½	2	2	¾	2	18	30	3650
30	278	4½	2	2	¾	2	18	30	4000
40	381	4½	2½	2	1	3	20	30	5100
50	470	4½	3	2	1	3	20	30	5700

*Height exclusive of hood.
Prices upon application.

Arcola Water Heaters

Coal Burning

Designed to provide a constant supply of stored hot water, up to its full rated capacity. Tested at factory with hydrostatic pressure of 250 pounds per square inch.

Has one 2½-inch inlet and two 2-inch outlet tappings. Smokepipe size, 6 inches.

No. 801 damper regulator, which automatically controls the dampers according to required temperature of water, can be supplied when specified; shaker lever and cleaning appliance furnished with each heater.

No.	No. of Sections	*25° Rise GPH.	*85° Rise GPH.	*100° Rise GPH.	Ht. In.	Width In.	Lgth. In.
1004-A	4	272	80	68	44⅛	17	12
1005-A	5	355	105	89	44⅛	17	15
1006-A	6	440	130	110	44⅛	17	18
1007-A	7	525	155	132	44⅛	17	21
1008-A	8	595	175	149	44⅛	17	24
1009-A	9	645	190	161	44⅛	17	27
1010-A	10	700	205	175	44⅛	17	30

*Based on 6-hour firing period.

Boiler Repairs for Heating Boilers

We are in a position to furnish repairs for all sizes and types of American Radiator & Standard Sanitary Corporation steam and hot water heating boilers.

In ordering parts it will be desirable to give the name and catalog number of the part required, together with the name and number of the boiler with its serial or series number. It is particularly important that the serial number or series number be given owing to the changes in construction of the different types of boilers.

If the serial or series number of the boiler is missing, either the casting number can be given, or if necessary, a paper template sketch of the required part will be of great assistance in insuring prompt and correct shipment of the part required.

Arco High Test Hot Water Supply Boilers

For Coal or Oil

Guaranteed Working Pressure 100 Pounds
Plant Tested to 250 Pounds (Hydrostatic Pressure)

For inexpensive operation in supplying the hot water requirements of large buildings. Specially constructed and guaranteed for 120 pounds water pressure; therefore, it can be connected directly to storage tank.

Adapted to complete automatic control.

When hand fired, it will run eight hours and longer without refueling.

When burning buckwheat coal, select boiler with 20% larger grate area than used for larger sizes of anthracite coal.

Equipped with two 2-inch brass cleanout plugs.

No.	*Heating Cap. Gal. Coal Burning	Grate Area Sq. Ft.	Width Base In.	Ht. Boiler In.	Lgth. Boiler In.	Ht. to Outlets In.	No. & Size Outlets In.	No. & Size Inlets In.	Smokepipe In.	Chimney Size In.	Chimney Ht. Ft.	Approx. Ship. Wt. Lb.
515	1200	2.72	31¾	53½	21	50	2—4″	2—4″	9	8x12	30	1611
618	1450	3.36	31¾	53½	25	50	2—4″	2—4″	9	8x12	35	1825
721	1700	4.00	31¾	53½	29	50	2—4″	2—4″	9	8x12	35	2070
824	1950	4.64	31¾	53½	33	50	2—4″	2—4″	9	8x12	35	2288
927	2200	5.28	31¾	53½	37	50	2—4″	2—4″	9	8x12	40	2507
1030	2450	5.92	31¾	53½	41	50	2—4″	2—4″	9	12x12	40	2728

*Capacities based on 100°F. rise in 6 hours.

Ideal Hot Water Supply Boilers

Cast Iron

Guaranteed Working Pressure, 100 Pounds per Square Inch
Tested at 250 Pounds

No. 02

When hot water supply boilers are subjected to some unusual pressure, as is the case when tanks are connected direct to city pumping station, and the pressure is increased during times of conflagration or the like, it is recommended that the system be equipped with a water-pressure reducing valve and relief valve.

Firing tools are not furnished.

No. 09

No.	Style of Grate	Diameter of Grate Inches	No. and Size of Outlets Inches	No. and Size of Inlets Inches	Capacity Gallons per Hour	Size Smoke-Pipe Inches	Approx. Ship. Wt. Lb.
01	Slide	10	1—1½	1—1½	90	5	165
02	Slide	10	1—1½	1—1½	140	5	238
03	Slide	10	1—1½	1—1½	192	5	265
04	Rocking	12	2—1½	2—1½	257	6	426
05	Rocking	12	2—1½	2—1½	280	6	478
06	Rocking	15	3—2	2—2	512	6	547
07	Rocking	15	3—2	2—2	560	6	648
08	Rocking	18	3—2	2—2	800	7	696
09	Rocking	18	3—2	2—2	880	7	845

Arco Water Regulator, for damper control, can be furnished at slight additional charge.

Ideal Dome Type Water Heaters

For 125 pounds working pressure. Plant tested to 315 pounds hydrostatic pressure.

Sturdily built; of cast iron. Coal burning; fuel door is at the top. No base bottom. Ashpan is not furnished.

Painted solid color.

No.	Gal.	Height Boiler In.	Diam. Grates In.	Tap. In.	Smoke Pipe In.	Approx. Ship. Wt.Lb.
65	65	19	10	1	5	77
80	80	22	10	1	5	95
95	95	22	10	1	5	96
125	125	25	10	1	5	110
150	150	28	10	1	5	124
210	210	25¼	12	2	5	151
250	250	24¼	12	2	5	150
300	300	27	15	2½	6	223
400	400	30½	15	2½	6	243

Ideal Scuttle-A-Day Hot Water Supply Boilers

For 125 pounds working pressure. Plant tested to 315 pounds hydrostatic pressure.

Firebrick combustion ring on all heaters. Smooth flat top and rocking grates. Draft damper can be hand-adjusted or operated from Arco automatic regulator, available at extra cost.

Ashpan furnished extra.

Base plate furnished at extra cost.

No.		75F	110F	175F
Heating Capacity	gallons	75	110	175
Diameter of Grate	inches	10	10	12
Height of Boiler	inches	18½	21½	25¾
Height to Center of Supply	inches	17½	20½	....
Height to Center of Return	inches	14¼	14¼	14
Outlets and Inlets	no. of each	1	1	2
Size	inches	1	1	1¼
Size Smokepipe	inches	6	6	6
Approx. Shipping Weight	pounds	108	123	195

King Laundry Tank Heaters

The hollow barrel has a dividing baffle plate which causes the water to circulate around the entire pot.

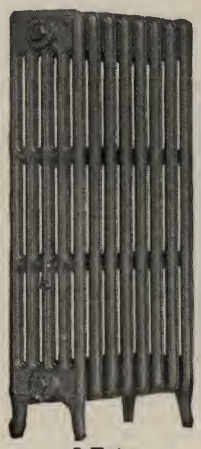
The barrel is tested under a pressure of 250 pounds.

Heater is made of cast iron, with cast iron bottom.

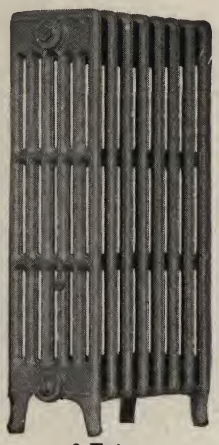
Equipped with ash pan.

Number		78	88
Number of Holes		2	4
Top	inches	18x20	20x24½
Diameter of Fire Pot at Top	inches	10¾	10¾
Diameter of Grate	inches	8	8
Height Over All	inches	22¼	22¼
Inlet and Outlet Connections	inches	1	1
Heating Capacity per Hour	gallons	75	75
Weight	pounds	90	105
Height of Fire Pot	inches	6½	6½

Corto Radiators



5-Tube



6-Tube

Thin tube, free-standing radiator with graceful, symmetrical lines and high heat output.

Its design is in keeping with any decorative scheme, and is particularly adapted for office buildings, apartments, schools, churches, etc.

Smooth surfaces do not catch the dust. Easily installed in new or old buildings.

Made in six heights: 14, 20, 23, 26, 32, and 38 inches four widths: 6 5/16, 8, 9 11/16, and 11 3/8 inches.

Further Information and Prices on Request

Corto Cast Iron Radiators

3-Tube—For Steam or Water

Width, 4⅝ Inches; Centers, 2½ Inches

No. of Sections	Length 2½ In. Per Section	Heat Output, Square Feet: 20-Inch Height 1¾ Sq. Ft. per Section	23-Inch Height 2 Sq. Ft. per Section	26-Inch Height 2⅛ Sq. Ft. per Section	32-Inch Height 3 Sq. Ft. per Section	38-Inch Height 3½ Sq. Ft. per Section
2	5	3½	4	4⅔	6	7
3	7½	5¼	6	7	9	10½
4	10	7	8	9⅓	12	14
5	12½	8¾	10	11⅔	15	17½
6	15	10½	12	14	18	21
7	17½	12¼	14	16⅓	21	24½
8	20	14	16	18⅔	24	28
9	22½	15¾	18	21	27	31½
10	25	17½	20	23⅓	30	35
11	27½	19¼	22	25⅔	33	38½
12	30	21	24	28	36	42
13	32½	22¾	26	30⅓	39	45½
14	35	24½	28	32⅔	42	49
15	37½	26¼	30	35	45	52½
16	40	28	32	37⅓	48	56
17	42½	29¾	34	39⅔	51	59½
18	45	31½	36	42	54	63
19	47½	33¼	38	44⅓	57	66½
20	50	35	40	46⅔	60	70
21	52½	36¾	42	49	63	73½
22	55	38½	44	51⅓	66	77
23	57½	40¼	46	53⅔	69	80½
24	60	42	48	56	72	84
25	62½	43¾	50	58⅓	75	87½
26	65	45½	52	60⅔	78	91
27	67½	47¼	54	63	81	94½
28	70	49	56	65⅓	84	98
29	72½	50¾	58	67⅔	87	101½
30	75	52½	60	70	90	105

*Add ½ inch to length for each bushing.

Regularly furnished with 4½-inch legs. Tappings—1½ inches top and bottom. Bushed for steam or water as per specifications. Can be supplied on special order with 6-inch legs, or without legs, at no extra charge.

Corto Cast Iron Radiators

For Steam or Water

4-Tube

Width, 6 5/16 Inches; Centers, 2½ Inches

No. of Sections	* Length 2½ In. per Section	Heat Output, Square Feet: 20-Inch Height 2¼ Sq. Ft. per Section	23-Inch Height 2½ Sq. Ft. per Section	26-Inch Height 2¾ Sq. Ft. per Section	32-Inch Height 3½ Sq. Ft. per Section	38-Inch Height 4¼ Sq. Ft. per Section
2	5	4½	5	5½	7	8½
3	7½	6¾	7½	8¼	10½	12¾
4	10	9	10	11	14	17
5	12½	11¼	12½	13¾	17½	21¼
6	15	13½	15	16½	21	25½
7	17½	15¾	17½	19¼	24½	29¾
8	20	18	20	22	28	34
9	22½	20¼	22½	24¾	31½	38¼
10	25	22½	25	27½	35	42½
11	27½	24¾	27½	30¼	38½	46¾
12	30	27	30	33	42	51
13	32½	29¼	32½	35¾	45½	55¼
14	35	31½	35	38½	49	59½
15	37½	33¾	37½	41¼	52½	63¾
16	40	36	40	44	56	68
17	42½	38¼	42½	46¾	59½	72¼
18	45	40½	45	49½	63	76½
19	47½	42¾	47½	52¼	66½	80¾
20	50	45	50	55	70	85
21	52½	47¼	52½	57¾	73½	89¼
22	55	49½	55	60½	77	93½
23	57½	51¾	57½	63¼	80½	97¾
24	60	54	60	66	84	102
25	62½	56¼	62½	68¾	87½	106¼
26	65	58½	65	71½	91	110½
27	67½	60¾	67½	74¼	94½	114¾
28	70	63	70	77	98	119
29	72½	65¼	72½	79¾	101½	123¼
30	75	67½	75	82½	105	127½

6-Tube

Width, 9 11/16 Inches; Centers, 2½ inches

No. of Sections	* Length 2½ In. per Section	Heat Output, Square Feet: 20-Inch Height 3 Sq. Ft. per Section	26-Inch Height 4 Sq.Ft. per Section	38-Inch Height 6 Sq. Ft. per Section
2	5	6	8	12
3	7½	9	12	18
4	10	12	16	24
5	12½	15	20	30
6	15	18	24	36
7	17½	21	28	42
8	20	24	32	48
9	22½	27	36	54
10	25	30	40	60
11	27½	33	44	66
12	30	36	48	72
13	32½	39	52	78
14	35	42	56	84
15	37½	45	60	90
16	40	48	64	96
17	42½	51	68	102
18	45	54	72	108
19	47½	57	76	114
20	50	60	80	120
21	52½	63	84	126
22	55	66	88	132
23	57½	69	92	138
24	60	72	96	144
25	62½	75	100	150
26	65	78	104	156
27	67½	81	108	162
28	70	84	112	168
29	72½	87	116	174
30	75	90	120	180

5-Tube

Width, 8 Inches; Centers, 2½ Inches

No. of Sections	* Length 2½ In. per Section	Heat Output, Square Feet: 20-Inch Height 2⅔ Sq. Ft. per Section	23-Inch Height 3 Sq. Ft. per Section	26-Inch Height 3½ Sq. Ft. per Section	32-Inch Height 4⅓ Sq. Ft. per Section	38-Inch Height 5 Sq. Ft. per Section
2	5	5⅓	6	7	8⅔	10
3	7½	8	9	10½	13	15
4	10	10⅔	12	14	17⅓	20
5	12½	13⅓	15	17½	21⅔	25
6	15	16	18	21	26	30
7	17½	18⅔	21	24½	30⅓	35
8	20	21⅓	24	28	34⅔	40
9	22½	24	27	31½	39	45
10	25	26⅔	30	35	43⅓	50
11	27½	29⅓	33	38½	47⅔	55
12	30	32	36	42	52	60
13	32½	34⅔	39	45½	56⅓	65
14	35	37⅓	42	49	60⅔	70
15	37½	40	45	52½	65	75
16	40	42⅔	48	56	69⅓	80
17	42½	45⅓	51	59½	73⅔	85
18	45	48	54	63	78	90
19	47½	50⅔	57	66½	82⅓	95
20	50	53⅓	60	70	86⅔	100
21	52½	56	63	73½	91	105
22	55	58⅔	66	77	95⅓	110
23	57½	61⅓	69	80½	99⅔	115
24	60	64	72	84	104	120
25	62½	66⅔	75	87½	108⅓	125
26	65	69⅓	78	91	112⅔	130
27	67½	72	81	94½	117	135
28	70	74⅔	84	98	121⅓	140
29	72½	77⅓	87	101½	125⅔	145
30	75	80	90	105	130	150

7-Tube

Width, 11⅜ Inches; Centers, 2½ Inches

No. of Sections	* Length 2½ In. per Section	Heat Output, Square Feet: 14-Inch Height 2½ Sq. Ft. per Section	20-Inch Height 3⅔ Sq. Ft. per Section
2	5	5	7⅓
3	7½	7½	11
4	10	10	14⅔
5	12½	12½	18⅓
6	15	15	22
7	17½	17½	25⅔
8	20	20	29⅓
9	22½	22½	33
10	25	25	36⅔
11	27½	27½	40⅓
12	30	30	44
13	32½	32½	47⅔
14	35	35	51⅓
15	37½	37½	55
16	40	40	58⅔
17	42½	42½	62⅓
18	45	45	66
19	47½	47½	69⅔
20	50	50	73⅓
21	52½	52½	77
22	55	55	80⅔
23	57½	57½	84⅓
24	60	60	88
25	62½	62½	91⅔
26	65	65	95⅓
27	67½	67½	99
28	70	70	102⅔
29	72½	72½	106⅓
30	75	75	110

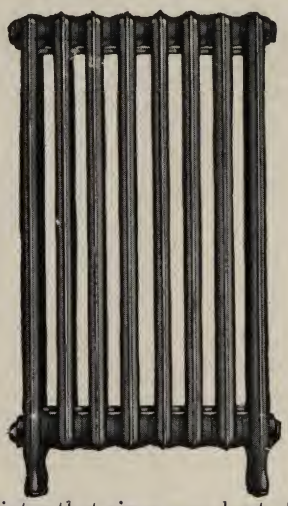
*Add ½ inch to length for each bushing.

Regularly furnished with 4½-inch legs on 4, 5, and 6-tube, and 3-inch legs on 7-tube.

Tappings. 1½ inches top and bottom. Bushed for steam or water as per specifications. Can be supplied on special order with 6-inch legs on 4, 5, and 6-tube and 4½-inch legs on 7-tube, or without legs at no extra charge. For height of loop section only, subtract 3 inches for 4, 5, and 6-tube and 1½-inches for 7-tube from total height as shown above.

Connections. Both steam and water—extra heavy 1½-inch right and left threaded nipples at top and bottom.

Arco Radiators



The little radiator that gives more heat. Small and compact. Ideal for recessing. Combines maximum heating effectiveness, minimum space requirement, ease of installation, and ease of cleaning.

Length, 1¾ inches per section.

Tappings are 1-inch top and 1¼-inch bottom on 3 and 4-tube radiators; 1¼-inch top and 1½-inch bottom on 6-tube radiators. Bushed if so specified.

Extra heavy, malleable nipples at top and bottom, 1-inch for 3 and 4-tube, 1¼-inch for 6-tube radiators.

Available only in even number of sections.

Shipping weight per square foot, 4½ pounds.

Heat Output—Square Feet

		3-Tube Wd. 3½ In. Cen. 1¾ In.	4-Tube Width, 4¾ Inches Centers, 1¾ Inches			6-Tube Width 7⅞ Inches Centers, 1¾ Inches		
No. of Sections	Length In.	25-In. Ht. 1.6 Sq. Ft. per Sec.	19-In. Ht. 1.6 Sq. Ft. per Sec.	22-In. Ht. 1.8 Sq. Ft. per Sec.	25-In. Ht. 2. Sq. Ft. per Sec.	19-In. Ht. 2.3 Sq. Ft. per Sec.	25-In. Ht. 3. Sq. Ft. per Sec.	32-In. Ht. 3.7 Sq. Ft. per Sec.
2	3.5	3.2	3.2	3.6	4	4.6	6	7.4
4	7.	6.4	6.4	7.2	8	9.2	12	14.8
6	10.5	9.6	9.6	10.8	12	13.8	18	22.2
8	14	12.8	12.8	14.4	16	18.4	24	29.6
10	17.5	16.	16.	18.	20	23.	30	37.
12	21.	19.2	19.2	21.6	24	27.6	36	44.4
14	24.5	22.4	22.4	25.2	28	32.2	42	51.8
16	28	25.6	25.6	28.8	32	36.8	48	59.2
18	31.5	28.8	28.8	32.4	36	41.4	54	66.6
20	35.	32.	32.	36.	40	46.	60	74.
22	38.5	35.2	35.2	39.6	44	50.6	66	81.4
24	42.	38.4	38.4	43.2	48	55.2	72	88.8
26	45.5	41.6	41.6	46.8	52	59.8	78	96.2
28	49.	44.8	44.8	50.4	56	64.4	84	103.6
30	52.5	48.	48.	54	60	69.	90	111.
32	56.	51.2	51.2	57.6	64	73.6	96	118.4
34	59.5	54.4	54.4	61.2	68	78.2	102	125.8
36	63.	57.6	57.6	64.8	72	82.8	108	133.2
38	66.5	60.8	60.8	68.4	76	87.4	114	140.6
40	70.	64.	64.	72.	80	92.	120	148.
42	73.5	67.2	67.2	75.6	84	96.6	126	155.4
44	77.	70.4	70.4	79.2	88	101.2	132	162.8
46	80.5	73.6	73.6	82.8	92	105.8	138	170.2
48	84.	76.8	76.8	86.4	96	110.4	144	177.6
50	87.5	80.	80.	90.	100	115.	150	185.
No. of Tubes....		**3**	**4**	**4**	**4**	**6**	**6**	**6**
Height....inches		25	19	22	25	19	25	32
*Square Feet.....		.914	.914	1.029	1.143	1.314	1.714	2.114

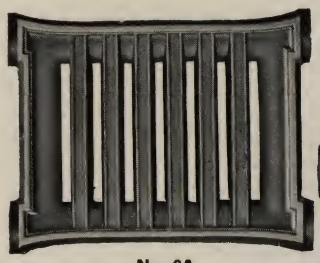
*Square feet per lineal inch.

Peerless Cast Iron Wall Radiators

For Steam or Water

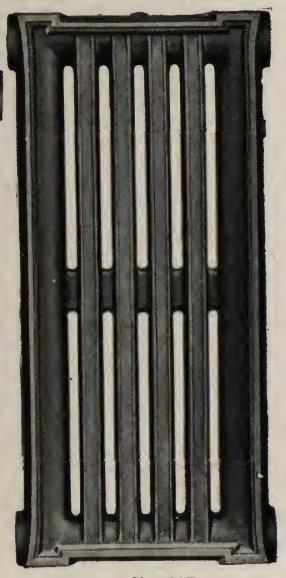
No. 11A

No. 8A



No. 6A

No. 8B



No. 11B

Sections 6A, 8A, and 11A have bars running crosswise of the section and tapped 1½ inches for connecting end to end.

Sections 8B and 11B have bars running the long way of the section and are regularly tapped 1½ inches to be connected side by side. The sections are connected by 1½-inch right and left hand internal nipples. Tappings may be bushed if desired.

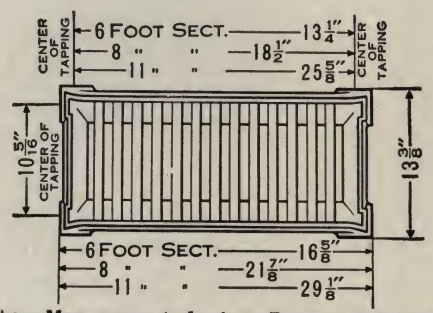
Special tappings at extra charge.

No.....	6A	8A	8B	11A	11B
Per Square Foot.....	....	....	....	....	....
Height.....inches	13 5/16	13 5/16	21 7/8	13 5/16	29 1/16
Length or Width.....inches	16 5/8	21 7/8	13 5/16	29 1/16	13 5/16
Thickness.....inches	2 7/8	2 7/8	3 1/16	2 7/8	3 1/16
Heat Output....square feet	6	8	8	11	11

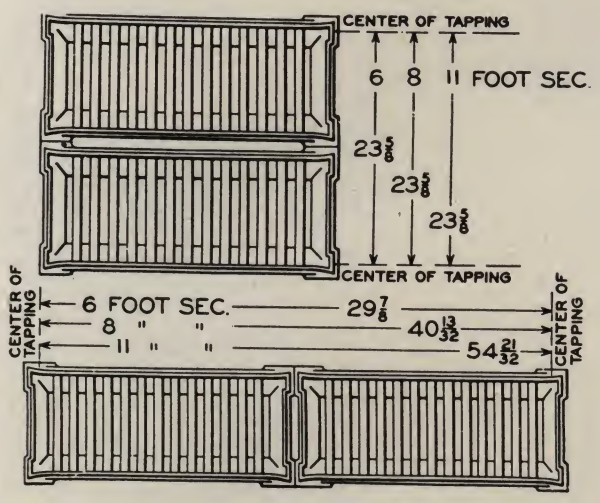
Further Information and Prices on Request

Peerless Wall Radiators

Measurements



Above Measurements Apply to Either A or B Styles



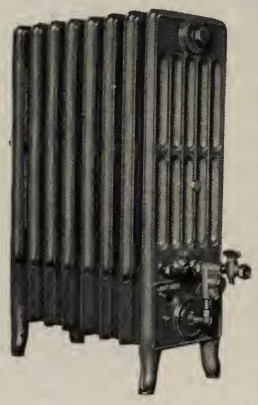
No. Sections	Length of Space Occupied: Type 6A Ft. In.	Type 8A Ft. In.	Type 11A Ft. In.	Types 8B, 11B Ft. In.	Heat Output Sq. Ft.: Type 6	Type 8	Type 11
1	1- 4 5/8	1- 9 7/8	2- 5 1/16	1- 1 5/16	6	8	11
2	2- 9 1/4	3- 7 3/4	4-10 1/8	2- 2 5/8	12	16	22
3	4- 1 7/8	5- 5 5/8	7- 3 3/16	3- 3 15/16	18	24	33
4	5- 6 1/2	7- 3 1/2	9- 8 1/4	4- 5 1/4	24	32	44
5	6-11 1/8	9- 1 3/8	12- 1 5/16	5- 6 9/16	30	40	55
6	8- 3 3/4	10-11 1/4	14- 6 3/8	6- 7 7/8	36	48	66
7	9- 8 3/8	12- 9 1/8	16-11 7/16	7- 9 3/16	42	56	77
8	11- 1	14- 7	19- 4 1/2	8-10 1/2	48	64	88
9	12- 5 5/8	16- 4 7/8	21- 9 9/16	9-11 13/16	54	72	99
10	13-10 1/4	18- 2 3/4	24- 2 5/8	11- 1 1/8	60	80	110
11	15- 2 7/8	20- 0 5/8	26- 7 11/16	12- 2 7/16	66	88	121
12	16- 7 1/2	21-10 1/2	29- 0 3/4	13- 3 3/4	72	96	132
13	18- 0 1/8	23- 8 3/8	31- 5 13/16	14- 5 1/16	78	104	143
14	19- 4 3/4	25- 6 1/4	33-10 7/8	15- 6 3/8	84	112	154
15	20- 9 3/8	27- 4 1/8	36- 3 15/16	16- 7 11/16	90	120	165
16	22- 2	29- 2	38- 9	17- 9	96	128	176
17	23- 6 5/8	30-11 7/8	41- 2 1/16	18-10 5/16	102	136	187
18	24-11 1/4	32- 9 3/4	43- 7 1/8	19-11 5/8	108	144	198
19	26- 3 7/8	34- 7 5/8	46- 0 3/16	21- 0 15/16	114	152	209
20	27- 8 1/2	36- 5 1/2	48- 5 1/4	22- 2 1/4	120	160	220
21	29- 1 1/8	38- 3 3/8	50-10 5/16	23- 3 9/16	126	168	231
22	30- 5 3/4	40- 1 1/4	53- 3 3/8	24- 4 7/8	132	176	242
23	31-10 3/8	41-11 1/8	55- 8 7/16	25- 6 3/16	138	184	253
24	33- 3	43- 9	58- 1 1/2	26- 7 1/2	144	192	264
25	34- 7 5/8	45- 6 7/8	60- 6 9/16	27- 8 13/16	150	200	275
26	36- 0 1/4	47- 4 3/4	62-11 5/8	28-10 1/8	156	208	286

Add 1/2 inch to the length for each end bushed and 1 1/8 inches for each hexagon nipple used in assembling.

American Gas Fired Steam Radiators

Corto Design—Unvented Type—With Thermal Control

6 Columns—Height, 26 Inches



No. of Sections	Each	Rating Square Feet	*Available Btu.	Length Over-all Inches	Approx. Ship. Weight Pounds
4	.....	34	8200	15 1/2	120
5	.....	41	9800	18	140
6	.....	48	11500	20 1/2	165
7	.....	55	13200	23	188
8	.....	62	14900	25 1/2	212
9	.....	68	16300	28	230
10	.....	75	18000	30 1/2	268
12	.....	88	21100	35 1/2	316
15	.....	108	25900	43	381
18	.....	129	31000	50 1/2	451

6 Columns—Height, 32 Inches

No. of Sections	Each	Rating Square Feet	*Available Btu.	Length Over-all In.	Approx. Ship. Weight Pounds
4	.....	42	10100	15 1/2	135
5	.....	51	12200	18	162
6	.....	60	14400	20 1/2	190
7	.....	70	16800	23	218
8	.....	79	19000	25 1/2	246
9	.....	88	21100	28	270
10	.....	97	23300	30 1/2	300
12	.....	116	27800	35 1/2	362

*In most cases the Btu. emission is in excess of the amount as listed. In order to maintain a whole number of square feet of rating per section, and to avoid confusion for those making computations, the available Btu. rating as shown is figured on the basis of a 240 Btu. heat emission per square foot of rating. These ratings are guaranteed.

On special order this radiator may be equipped with thermostatic gas pilots which light the burner when heat is wanted. This makes possible automatic room temperature control through the connection of one or more radiators to any standard wall thermostat. An alternate means of automatic room temperature control consists of the installation of any standard type of temperature-operated throttling gas valve, located in the gas line near the radiator.

Arco Multifin Convectors

For All Heating Systems Except One-Pipe Steam

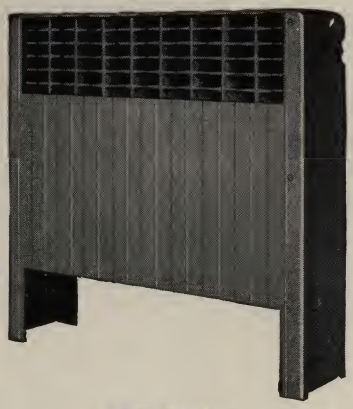
Arco Multifin Convectors are manufactured of the finest material and workmanship, and in combination with Arco Enclosures give highly efficient service.

Tested and rated at the Institute of Thermal Research.

Have 3/4 inch diameter seamless copper tubes, non-ferrous fins, cast iron headers and substantial steel side plates. Tubes are expanded into fins, and the ends rolled into the headers and bushed to insure positive and lasting contact.

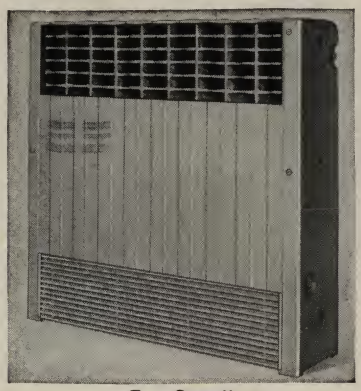
- It is not practical for us to list many items used for special service.
- Let us help you with problems where special material is required.

Sunrad Radiators



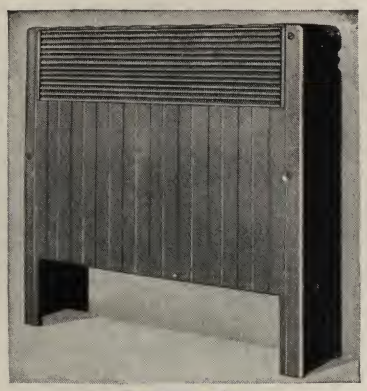
Free Standing

Without grilles.



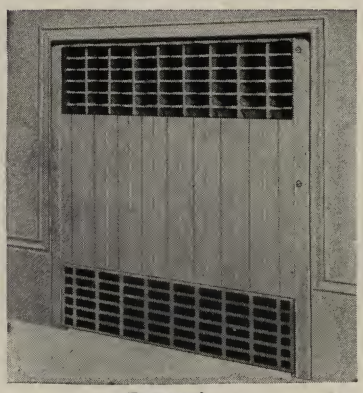
Free Standing

Stamped streamlined grille at bottom only. Can also be furnished with streamlined grille at top.



Free Standing

Stamped streamlined grille at top only. Can also be furnished with grille at bottom.



Recessed

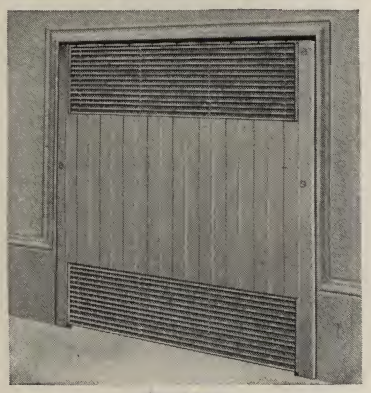
Stamped lattice grille at bottom only. Can also be furnished with grille at top.

A modern radiator embodying new ideas in design and construction. Developed for the dual purpose of either free-standing or recessed installation, without a separate metal or wood enclosure. Attractive, highly efficient, compact and space saving.

Has cabinet-like exterior which can be painted or enameled any color to match surroundings.

Available in two convenient heights and depths: 20 inches high and 5 inches deep, or 23 inches high and 7½ inches deep. Can also be furnished without legs, in both 5 and 7½-inch depths.

Top and bottom grilles are available when desired.

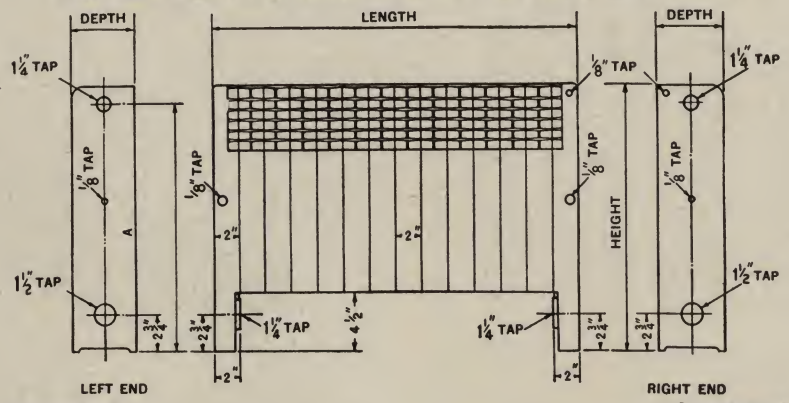


Recessed

Stamped streamlined grille at both the top and the bottom.

Ratings and Dimensions

Based upon Engineering Standard of 240 BTU. per Square Foot per Hour



With Legs | **Connections**

Size	inches	20x5	23x7½
*Heat Output	square feet	2.0	3.0
Length per Section	inches	2	2
Depth	inches	5	7½
Height	inches	20	25
Dimension A	inches	18 11/16	21 11/16

*Outputs shown are for free standing radiation. For recessed installations, before selecting radiator, add 5 per cent to room radiation requirements if ¾-inch air space at top and ½-inch at back and sides is provided; and add 15 per cent if tightly recessed without clearance top and sides but with ½-inch space at back.

Both steam and water extra heavy 1-inch (on 5x20 inch) and 1¼-inch (on 7½x23 inch) malleable nipples at top and bottom. End sections regularly supplied with 1¼-inch inside bottom tappings, and 1½-inch outside bottom and 1¼-inch outside top tappings, or bushed if so specified, for T-3, T-4 and T-6 connections. All other connections furnished with closed leg on one end section and order must specify right or left supply.

Data on legless types for wall hung installation, typical recessed installation, tappings available, and conversion factors for specified hot water temperatures will be furnished upon request.

Arco Convectors

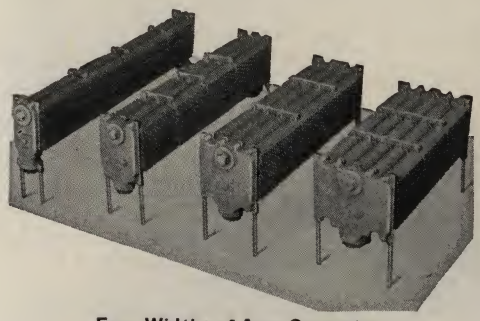
Well adapted for steam, vapor, or hot water systems. When installed with Arco enclosures, combine high heating efficiency with attractive appearance.

Made of cast iron sections, all contacting surfaces of which are machine-ground, assembled with malleable nipples and individual tie bolts at each nipple port. This construction develops an exceptionally sturdy unit which is able to withstand the usual handling abuses met with before final installation.

Arco Convectors possess a long carry-over output, a distinct advantage when used with automatically controlled heating apparatus.

Variety of piping connections provided permits installation in limited space allowances. The No. 3, No. 5, and No. 7 units are tapped 1¼ inches, and No. 9, 1½ inches.

Steel legs are furnished, without charge, to support the convector, and are screwed into tappings in the bottom of each header, permitting adjustment for leveling or pitching.



Four Widths of Arco Convector

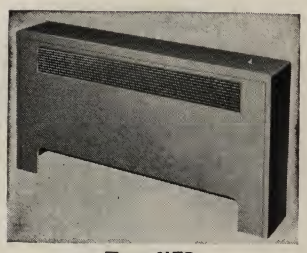
No. 3—3¾ Inches, No. 5—5⅝ Inches, No. 7—7⅝ Inches, and No. 9—9½ Inches

Type SW—Wall Hung

A complete enclosure, with sloping top, for wall hung treatment. Rounded corners and streamlined grille. Has a removable pan type front.

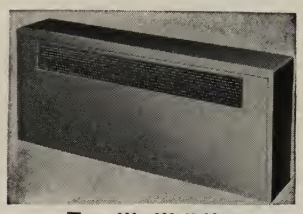
Types OF and OFC—Overlap Front

Type OF front secured with screws. Type OFC front secured with friction clips (60-inch maximum length). Complete enclosures for recessed treatment, either in blank walls or under windows. Rounded corners and streamlined grille.



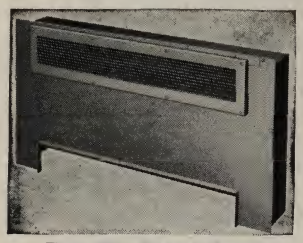
Type NFS

A complete enclosure for general use. Can be free standing, although is usually partially recessed. Rounded corners and streamlined grille. Has a removable pan type front.



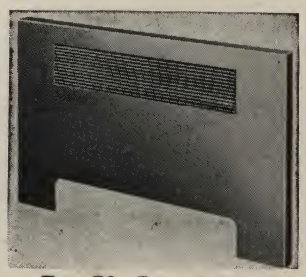
Type W—Wall Hung

A complete enclosure for wall hung treatment. Rounded corners and streamlined grille. Has a removable pan type front.



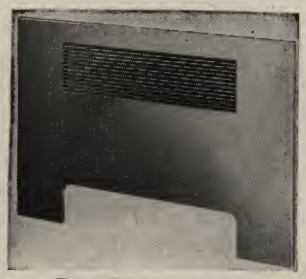
Type PF—Plaster Front

A complete enclosure designed for use in plaster or tile treatment. Must be fully recessed. Rounded corners and streamlined grille.



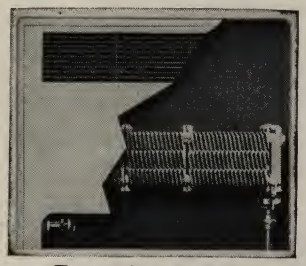
Type FC—Front Panel

A front panel only, designed for recess treatment only. Has top and side flange which sets against face of plaster. Used where wider convectors are required in shallow recesses. Rounded corners and streamlined grille.



Type FP—Front Panel

A front panel only, designed for recessed treatment only. Is flush with plaster and made to overlap recess at top and sides. Rounded corners and streamlined grille.



Typical Installation of Arco Convector in Arco Enclosure

Optional Features at Extra Cost

Damper, access door, insulation, loose grille, square or slotted outlet and inlet grilles, and other than standard lengths and heights can be furnished on all types. Inlet grille can be furnished on all types except W and SW. Panel moulding can be furnished on all types except PF and PFP.

Top outlet grille for vertical discharge can be furnished on Types NFS and W.

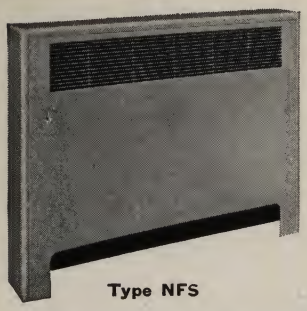
Special gages and designs can also be furnished.

Arco Enclosures

Designed on simple but attractive lines. They harmonize with any decorative treatment.

Scientifically proportioned to conduct the right volume of air over the heated surfaces of the convectors and diffuse it into the rooms, properly heated.

Arco Streamlined Enclosures



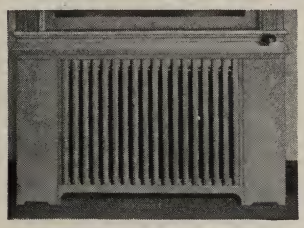
Type NFS

Arco Enclosures are constructed of strongly braced furniture steel, correctly designed to insure greatest efficiency and primed for painting before shipping.

Type NFS is the standard complete enclosure for general use, consisting of top, back, ends and a removable front. It can be fully recessed, partially recessed or completely free standing in the room.

Other complete enclosures: Type PF, Plaster Front, designed for use in plaster or tile treatments; Types OF and OFC, Overlap Front, in which the front overlaps tile or plaster; and Types W and SW, Wall Hung, for wall-hung or off-the-floor treatment.

Panel fronts only, Types FP, PFP, and FC are also available for practically any treatment.



Arco O. K. Enclosures

This enclosure for free standing radiators of Corto, Arco or Peerless types covers the radiator attractively, but leaves front of radiator exposed for better comfort. Has a convenient flat top.

Arco Covers

A neat, one-piece covering with flat top that fits over Corto, Arco, or Peerless Radiators. Protects walls and curtains.

Prices upon request.

No. 200 Lawson Gas Radiant Wall Insert Heaters

Designed in the modernistic trend. Cast-iron front, finished in white vitreous enamel or antique bronze. Wall box of heavy sheet metal, heavily japanned. Cast-iron backwall with aluminum reflector cheeks. Two large double radiants.

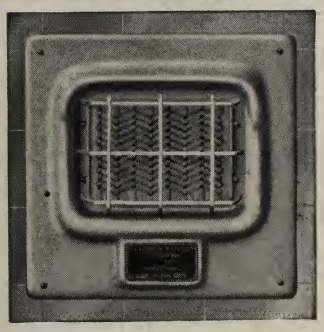
Gas capacity 8000 B.T.U.

Approved by American Gas Association Laboratory.

Dimensions: Front, width 14 3/16 inches, height, 20 inches; wall box, width 12 1/2 inches, height 17 5/8 inches, depth 3 3/4 in. Shipping weight, 32 pounds.

No. **200**.....each ....

No. 205 Lawson Electric Wall Insert Heaters



Cast iron face and heavy steel rear jacket.

Finished in white or colored vitreous porcelain enamel.

Heating element, 110 volts. Amperage, 9.1. Watts, 1000.

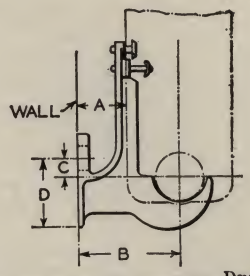
Width outside, 14 inches; height, 15 inches.

Depth into wall, 2 inches.

Rear width 11 3/4 in.; height, 12 1/8 inches.

Shipping weight, 27 pounds.

No. **205**, White or Black Enamel.....each .....
No. **205**, Colored Enamel.....each .....



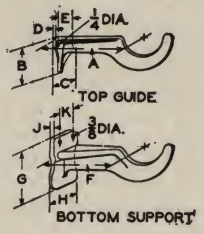
American Corto Radiator Brackets

Made of Malleable Iron

A	B 4-Tube	B 5-Tube	B 6-Tube	B 7-Tube	C	D
2	5 3/16	6	6 7/8	7 3/4	7/8	4 3/8
3	6 3/16	7	7 7/8	8 3/4	1 3/8	4 3/8
4	7 3/16	8	8 7/8	9 3/4	1 3/8	4 3/8
5	8 3/16	9	9 7/8	10 3/4	1 3/8	4 3/8

Dimensions, Inches

Corto Concealed Radiator Brackets



Top Bracket

Type of Radiator	A	B	C	D	E
4-Tube	4 1/2	2 5/8	1 3/4	5/16	1
5-Tube	5 3/8	2 5/8	1 3/4	5/16	1
6-Tube	6 3/16	2 5/8	1 3/4	5/16	1
7-Tube	7	2 5/8	1 3/4	5/16	1

Dimensions, Inches

Bottom Bracket

Type of Radiator	F	G	H	J	K
4-Tube	4 1/2	4 3/8	2 1/4	1/2	1 1/4
5-Tube	5 3/8	4 3/8	2 1/4	1/2	1 1/4
6-Tube	6 3/16	4 3/4	2 1/4	1/2	1 1/4
7-Tube	7	4 3/8	2 1/4	1/2	1 1/4

Dimensions, Inches

Modern All Steel Adjustable Radiator Brackets

No. 1 Wall Type—Bottom Hung

Supports 7 and 9-foot vertical wall radiation. Always specify make of radiation.

No.	**1**
Each	**$2.00**
Holds Radiator from Wall.....inches	1 3/4
Width Angle Support.....inches	4
Lateral Adjustment.....inches	3
Center to Center Bolt Holes.....inches	8 1/4
Vertical Adjustment.....inches	2
Height Back Plate.....inches	18 1/2
Measures from Top of Bracket to Center of Top Anchor Slot.....inches	2 7/8
Measures from Bottom of Radiator to Center Bottom Anchor Slot.....inches	5 1/4

Tube Type—Bottom Hung

Nos. 19 and 19A support tube radiation up to and including 23 inches in height. Nos. 20 and 20A support tube radiation over 23 inches in height.

This bracket is very similar to No. 1 but has a keyhole angle riveted to the bottom of the hanger back. The shoe passes through this keyhole which allows the radiation to be lowered in front of the baseboard.

When ordering specify No., make of radiation, and number of tubes to the section.

No.	19	19A	20	20A
Each	**$2.20**	2.00	2.20	2.00
Holds Radiator from Wall.....inches	2 1/2	1 3/4	2 1/2	1 3/4
Width Angle Support .....inches	4	4	4	4
Lateral Adj.....inches	3	3	3	3
Center to Center Bolt Holes.....inches	5 1/4	5 1/4	8 1/4	8 1/4
Vertical Adj....inches	2	2	2	2
Height Back Plate in.	12 5/8	12 5/8	18 5/8	18 5/8

Walltube Adjustable Radiator Brackets

Will hang all types and sizes of wall, tubular and concealed radiators. Cannot be seen above or below the radiator. Made entirely of steel. Full floating, 3-point bearing, flexible, no vibration. Any distance from wall can be supplied; 1½ inches is A.I.A. standard.

Upper and lower part formed in channels to give greatest strength, 3 inches wide; 3½ inches wide can be supplied.

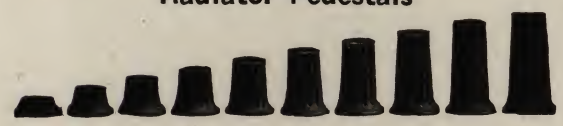
Hook made of S.A.E. 1035 steel guaranteed to hold 800 lbs. Suspension bolt ½-inch diameter, 6 inches long, threaded full length, slotted head giving 9-inch adjustment vertically, 1-inch horizontally. Painted with priming coat of grey.

Standard hook will hang radiators 17 to 40 inches high; short hook, 13 to 24 inches.

Packed in cartons, 20 to the carton.

Weight of one bracket, 3 pounds.

Radiator Pedestals



Radiator pedestals are made in the following heights: ½, 1, 1½, 2, 2½, 3, 3½, 4, 4½ and 5 inches.

Cast Iron Adjustable Radiator Feet

No.	Extension Inches	Price Each
1	⅞ to 1¼	$.30
2	1¼ to 1¾	.35
3	1½ to 2½	.45
4	2 to 3	.50
5	3 to 4	.55
6	4 to 5	.60

No. 4 Radiator Push Nipples

Can be furnished in all sizes for all types of radiators.

No. 4.....each $.30

Radiator Screw Nipples

No. 5

With Right and Left Threads

Heavy malleable radiator screw nipples with right and left threads.

Size.....in.	1½	1¾	2
Price.....each	$.15	.20	.20

B&G Thermocheks

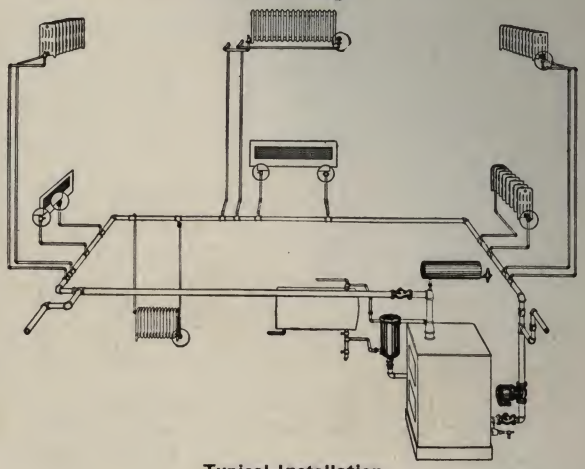
The Thermochek controls the flow of boiler water over the coils of the heater. This prevents water in the storage tank from overheating.

Also prevents formation of lime in coils and piping in systems where water heated beyond 140° causes this formation.

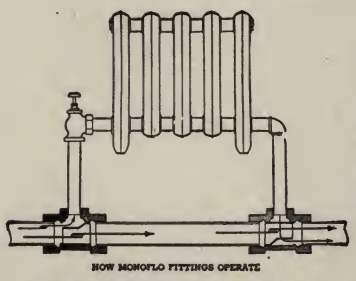
The Thermochek can be easily adjusted from 120° to full capacity of the heater by means of externally operated regulating handle.

No.....	1½	2
Size.....inches	1½	2
Each.....	$18.70	20.90

B & G Monoflo System of Hot Water Heating



Typical Installation



Monoflo Fittings at Radiator Supply and Return Connections to the Main

The B & G Monoflo Fitting enables a 1-pipe system to operate with the efficiency of a 2-pipe job. By the construction of the supply Monoflo, a portion of hot water is diverted from the main into the radiator and cooled water returned to the main through a return Monoflo fitting. This makes the low cost one-pipe system a practical installation.

B&G Cast Iron Monoflo Fittings

This fitting is for one-pipe or single circuit hot water heating systems.

Installed at the junction of the flow and risers. Diverts hot water to the radiator and returns cooled water to the main.

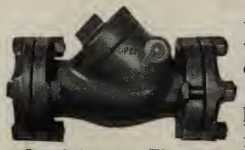
In ordering specify feed or return.

Tapping Size, In.	Each	Shipping Wt. Lb.	Tapping Size, In.	Each	Shipping Wt. Lb.
1 x ½	$2.00	1½	2 x1	$4.00	4¾
1 x ¾	2.00	1½	2½x ½	5.00	5¾
1¼x ½	2.50	2¾	2½x ¾	5.00	5¾
1¼x ¾	2.50	2¾	2½x1	5.00	5¾
1¼x1	2.50	2¾	2½x1¼	5.00	5¾
1½x ½	3.00	3¼	3 x ½	6.00	9¾
1½x ¾	3.00	3¼	3 x ¾	6.00	9¾
1½x1	3.00	3¼	3 x1	6.00	9¾
2 x ½	4.00	4¾	3 x1¼	6.00	9¾
2 x ¾	4.00	4¾	.....	....	...

B&G Flo-Control Valves

Used to prevent circulation of hot boiler water when heat is not needed in radiators. Easily opened for gravity circulation by turning external wing extension of valve stem.

*Straightway pattern screwed 1 end, flanged 1 end.

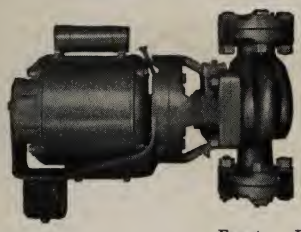


Straightway, Flanged

Angle, Flanged

Size.....in.	1	1¼	1½	2	2½	3
Straightway..ea.	$7.38	9.36	12.32	14.86	19.80	33.00
Angle.....ea.	$7.38	9.36	12.32	14.86	19.80	28.06
Two Ends.....	Scrd.	Scrd.	*Flgd.	Flgd.	Flgd.	Flgd.
Shipping Weight:						
Straightway.lb.	5	5	17	25	33	53
Angle.....lb.	4	4	18	22	33	43

B&G Boosters



Oil lubricated. The 110-volt, 60-cycle motor is equipped with an overload circuit breaker which eliminates any possibility of a burned out motor.

Has iron body.

Size No.	Each	Face to Face Inches	Flanged Pipe Size Inches	Motor Hp.	Delivery GPM.	E.D.R. Sq. Ft. at 150 BTU.	Ship. Wt. Lb.
H1	$56.10	8½	1	⅙	25	750	55
H1¼	61.88	8½	1¼	⅙	35	1000	56
H1½	65.18	8½	1½	⅙	47	1750	57
H2	72.60	8½	2	⅙	70	3500	62
H2½	103.40	9¼	2½	¼	118	4500	85
HHD3	128.70	12	3	⅓	147	5500	124

B&G Motorized Valves

Flanged Ends—For Hot Water Systems Only

A straightway valve for zoned hot water heating systems as a positive control of boiler water flow. Opens in few seconds; uses no current when open or closed.

Also used in gravity hot water systems to shut off the flow of boiler water when heat is not needed in the radiators.

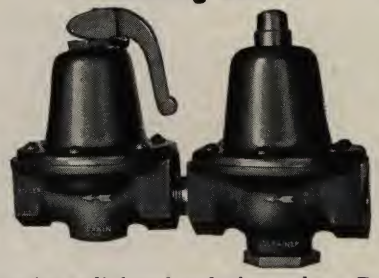
Valve can be installed in either vertical or horizontal pipes and in any position except upside down. Has auxiliary low voltage switch.

Transformer is furnished separately at no extra cost.

Size Inches	2-Wire Unit No.	2-Wire Unit Each	3-Wire Unit No.	3-Wire Unit Each	Shipping Wt. Lb.
1	2M1	$55.00	3M1	$51.70	23
1¼	2M1¼	59.40	3M1¼	56.10	23
1½	2M1½	63.80	3M1½	60.50	27
2	2M2	68.20	3M2	64.90	27

Special voltages: 220 volts, 60 cycles, $2.20 extra; 110 volts, 25 or 40 cycles, $5.50 extra; 220 volts, 25 or 40 cycles, $7.70 extra.

No. 3 B & G Dual Unit Relief and Reducing Valves



A combination relief and reducing valve. Body and all parts exposed to water are made of corrosion-proof brass. Has built-in strainer and extra large relief diaphragm. Size, ½ inch. Chromium finish. Shipping weight, 5 pounds.

No. 3 ..... each $9.24

B&G High Pressure Relief Valves

***Pressure Range, 40 to 150 Pounds**

Designed to give protection against excess pressure in service or domestic water systems.

Diaphragm operated, with all working parts made of brass.

Body in either brass or iron.

	Brass		Iron	
No.	4	5	9	10
Each	$6.28	7.60	4.62	5.94
Size...in.	½	¾	½	¾
Approx. Ship. Wt..lb.	2½	2¾	2¾	3

*Standard setting 75 pounds. For other setting specify when ordering.

B & G Air Vents

The B & G Air Vent is for all hot water heating systems.

It offers positive assurance of eliminating air from piping of hot water heating systems.

Made in ⅛-inch size only.

Each $7.00

B & G Air Cushion Compression Tanks

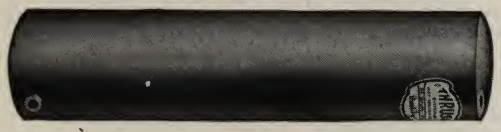
For use on closed hot water heating systems. Expansion of heated water is taken up by the tank, providing a cushion of compressed air against sudden pressures and water hammer shocks which may injure the boiler.

On high temperature installations, a closed system with a compression tank is imperative, in order that sufficient pressure can be developed to prevent boiling of the water in the system. Tank can be installed either in the basement or any convenient place in the system. To be installed on the ceiling only.

No.	15	18	21	24	30	40
Each	$13.10	14.70	17.10	18.00	20.50	24.00
Capacity.....gal.	15	18	21	24	30	40
*Radiation Capacity, Up To.....ft.	300	500	700	1000	2000	3000
Tank Size.....in.	12x30	12x36	12x42	12x48	12x60	13x71
Approx. Ship. Wt.lb.	31	35	39	44	56	68

*Capacities are based on forced circulation and small pipe sizes. On old systems use next larger size tank.

Thrush Air-Tight Pressure Tanks



Carefully tested under pressure; fully guaranteed.

For buildings higher than two stories, use one size larger pressure tank.

For jobs larger than 2000 square feet of radiation, except when flow control system is used, add additional tanks of proper capacity.

No.	Each	Size Inches	Ordinary Capacity Sq. Ft.	Flow Control Capacity Sq. Ft.	Wt. Lb.
00	$15.00	12x30	Up to 300	Up to 425	35
2	19.33	12x60	Up to 1200	Up to 2000	60
3	22.00	14x60	Up to 2000	Up to 3000	73

Thrush High Pressure and Temperature Relief Valves

An iron valve made to protect hot water supply boilers, range boilers, gas storage heaters, etc., from excess pressure and temperature. Brass working parts.

A fusible plug melts if excessive temperatures are built up.

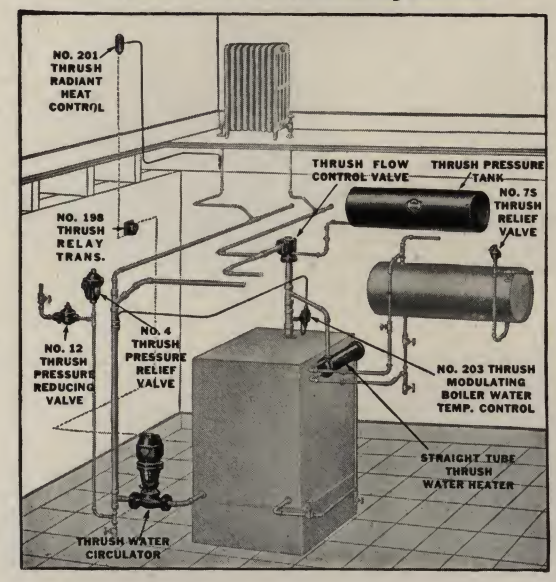
Set at 85 pounds; if other setting is desired, specify pressure when ordering.

Adjustable at factory, 35 to 150 pounds.

No.	*76	†78	*87	†89
Each	$3.60	4.60	4.40	5.40
Size.....inches	½	½	¾	¾
Weight.....pounds	3	3	4	4

*Iron †Brass

Thrush Flow Control Systems



The Thrush Flow Control System of hot water heating assures a continuous flow of radiant heat, reduces fuel consumption, and provides domestic hot water the year around. A reservoir of hot water is kept available for distribution when heat is needed. The No. 201 Thrush Radiant Heat Control automatically controls circulation of water in the system by starting and stopping the water circulator, which quickly forces water through the flow control valve into every radiator. Room temperature is maintained within a fraction of a degree.

Since water in the boiler is hotter, an auxiliary water heater is more efficient and provides a hot domestic water supply automatically in winter or summer. Only one control valve is needed, yet there is no possibility of hot water getting into the radiators when it is not needed, because air and gases are vented and expansion provided for beneath the valve seat, so the valve closes tightly.

This system converts an open gravity job into a closed pressure system with automatic filling and maintenance of the proper water supply, automatic relief of excess pressures, adequate provision for expansion, and complete automatic control of circulation and temperature.

This system can be installed on old or new heating plants.

Class FC System—Valve and Circulator Only

Radiation Sq. Ft.	Flow Control Valve No.	Flow Control Valve Each	Flow Control Valve Size, In.	Water Circulator No.	Water Circulator Each	Water Circulator Size, In.
Up to 300	114	$4.50	1	16 Jr.	$33.34	1
Up to 450	114A	6.13	1¼	16 Jr.	33.34	1
Up to 750	115	7.50	1½	14	37.34	1
Up to 1000	115	7.50	1½	14A	40.67	1¼
Up to 1500	120	9.33	2	15	42.67	1½
Up to 2500	125	13.20	2½	22	48.00	2
Up to 4000	130	18.67	3	23	66.67	3

Class FCC System—Complete Circulation, Temperature and Pressure Control

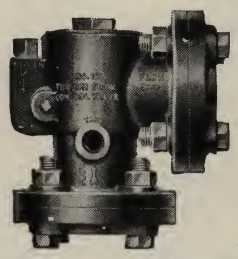
Flow control valve and water circulator same as for class FC, shown above.

No. 4, ¾-Inch Differential Pressure Relief Valve.each	$10.60
No. 12, ¾-Inch Pressure Reducing Valve.....each	8.00
No. 201, Radiant Heat Control.....each	27.67
No. 198, Relay Transformer.....each	9.00
No. 203, Modulating Water Temperature Control .....each	29.33

Pressure Tank Capacities for Flow Control Systems

No.....	00	2	3
Each.....	$15.00	19.33	22.00
Rad., Up to sq. ft.....	425	2000	3000

Thrush Flow Control Valves



For Use with Thrush Circulator

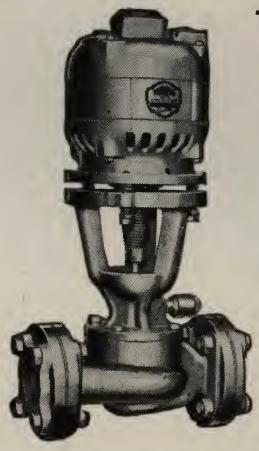
Works by pressure head generated by Thrush Water Circulator.

Has opening below seat to provide for expansion and elimination of air and gases into Thrush Pressure Tank.

Manually operated set screw permits opening permanently but is not necessary for normal operation.

No.	Each	Size, In.	Connection	Rad. Cap. Sq. Ft.	Ship. Wt., Lb.
114	$4.50	1	Screwed	300	3
114A	6.13	1¼	Union	500	7
115	7.50	1½	Union	1000	8
120	9.33	2	Flanged	1500	14
125	13.20	2½	Flanged	2500	26
130	18.67	3	Flanged	4000	39

Thrush Water Circulators



A centrifugal type pump for circulating water in a heating system or in a water storage system. Assures positive circulation and uniform heating on old or new plants, with subsequent fuel economy. Self contained; shipped ready to install.

With 110-volt a.c. 60-cycle motor for light line. Special motors, at slight additional cost.

No.	Each	Tapping In.	Cap. Del. GPM.	Cap. Rad. Sq. Ft.
16 Jr.	$33.34	1	15	450
14	37.34	1	25	750
14A	40.67	1¼	35	1000
15	42.67	1½	50	1500
22	48.00	2	75	2500
23	66.67	3	140	4000

No. 4 Thrush Differential Pressure Relief Valves

Tested, approved, and listed as Standard by the Underwriters' Laboratories and complies with A.S.M.E. Code.

Used to protect boilers from excess pressure. Suitable for 1, 2, or 3-story buildings. Set to open at 28 pounds pressure. Special adjustment up to 35 pounds. Furnished with testing lever.

Valve has large metal diaphragm which actuates movement of a free-working valve member.

Weight, 12 pounds.

No.....	4	4A
Each.....	$10.60	12.00
Tapped....inches	¾	1

No. 12 Thrush Pressure Reducing Valves

Suitable for 1, 2, or 3-story buildings.

This valve provides automatic filling of the system and assures maintenance of proper water supply in the system at all times. It also has a built-in strainer. The strainer is easily accessible and may be kept clean. Large water-ways fill the system rapidly.

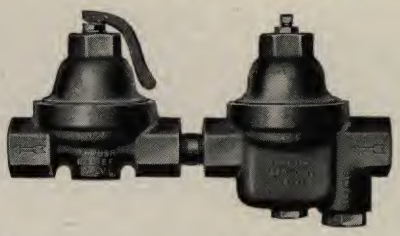
All working parts are of brass.

Tapping, ¾ inch.

Weight, 7 pounds.

No. 12.....each $8.00

No. 67 Thrush Dual Control Units



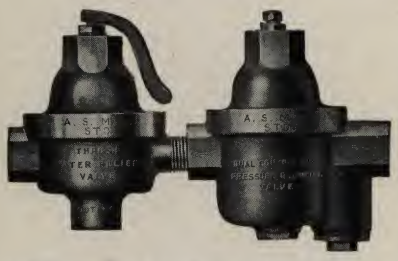
Provides automatic pressure relief, reduces line pressure, automatically fills and maintains water supply in system.

With cast iron housing, brass working parts and metal diaphragm. Built in strainer. No restricted openings.

Tapping, ½ inch. Weight, 7 pounds.

No. **67**.....each **$5.33**

Thrush Standard Dual Control Units



Provides automatic pressure relief, reduces line pressure, automatically fills and maintains water supply in system.

Made of red brass with metal diaphragms and furnished complete with built-in strainer. Has unrestricted openings.

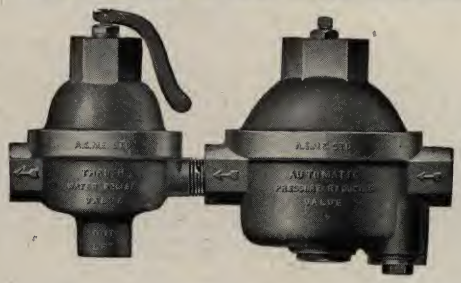
Will maintain water supply in system and fill boiler rapidly.

Tapping, ½ inch.

Weight, 6 pounds.

Each..... **$9.00**

Thrush Master Dual Control Units



Provides automatic pressure relief, reduces lines pressure, automatically fills and maintains water supply in system. Has built in strainer, large water-ways.

Made of red brass with metal diaphragms. Tapping, ½ inch.

Weight, 8 Pounds.....each **$13.00**

Thrush High Pressure Relief Valves

Nos. 45, 55 and 90

Protects hot water supply boilers, etc. from excess pressure.

Metal diaphragm operated; brass working parts; equipped with testing levers.

Approved by Underwriters; A.S.M.E. Code.

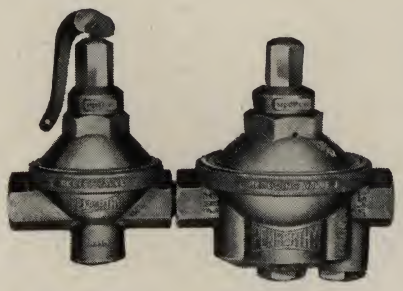
Set at 85 lb.; other setting, specify pressure. Adjustable at factory, 35-150 lb.

Nos. 75, 77, 86 and 88

No.....	*45	*75	†77	*55	*‡85	*86	†88	*90
Each.....	$3.00	2.80	3.80	3.60	4.00	3.60	4.60	5.00
Size.....in.	½	½	½	¾	¾	¾	¾	1
Weight..lb.	3	3	3	4	4	4	4	4

*Iron. †Brass. ‡Similar to 55; male and female tapping.

Penberthy Pressure and Relief Control Valves



For automatically keeping a hot water system filled with water, and for automatically relieving any excess pressure that may occur in that system.

Made of high grade steam bronze. Large laminated nickel silver diaphragms that are sensitive and positive in action; resistant to heat and corrosion, and retain their original flexibility without becoming brittle. Gaskets above and below the diaphragms and relieved casting corners prevent binding and assure maximum diaphragm efficiency.

Special composition discs are sufficiently hard not to interfere with valve flow, yet soft enough to prevent cracking and provide perfect seating. Springs are carefully calibrated and the only spring exposed to water is the one below the seat in the reducing valve; this spring is phosphorous bronze and makes the valve more sensitive at lower pressure differentials.

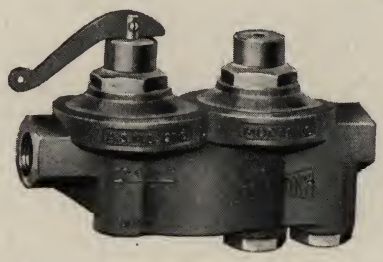
Large monel strainers protect the seats of both the relief and reducing valves against injury from scale or other foreign matter. Strainer in reducing valve is easily removable for cleaning without disturbing any other parts. Relief valve has a lever for testing the valve in service without building up a pressure in excess of valve setting.

Relief valve set at 28 pounds; reducing valve at 12 pounds.

Pipe size, ½ inch.

Model A Extra Large Capacity; Ship. Wt. 8 lbs..each **$16.00**
Model B Standard Capacity; Ship. Wt. 6¼ lbs..each **14.00**

Model C Penberthy Pressure and Relief Control Valves



Automatically keeps a hot water heating system filled with water and also automatically relieves any excess pressure that may occur in the system.

Consists of a reducing valve set to maintain a pressure of 10–12 pounds, and a relief valve equipped with try lever for quick testing without waiting to build up pressure in excess of valve setting. Set to open at 28 pounds.

Fully complies with A.S.M.E. Code.

Constructed of high grade steam bronze. Laminated metal diaphragms are sensitive and positive in action; resistant to heat and corrosion, and retain their original flexibility without becoming brittle. Binding is prevented and maximum diaphragm efficiency assured by relieved casting corners and gaskets above and below the diaphragms.

Special composition discs provide perfect seating without cracking or interference with valve flow. Springs are carefully calibrated and the only spring exposed to water is the one below the reducing valve seat; this spring is phosphorous bronze and makes the valve more sensitive at lower pressure differentials.

Monel strainer protects seats of both valves against damage from scale or other foreign matter, strainer is easily removed for cleaning without disturbing other parts.

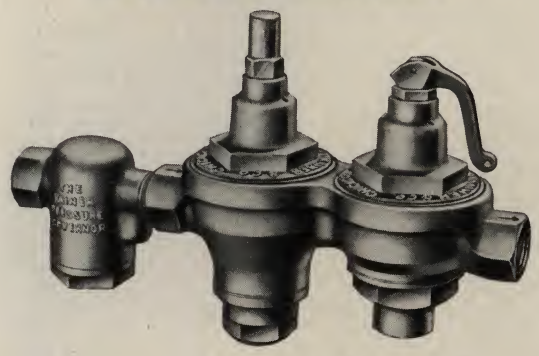
Pipe size, ½ inch.

Shipping weight, 4½ pounds.

Model C Standard Capacity.....each **$10.00**

DeLuxe Model B-2 Kainer Governors

For Hot Water Heating Systems



A safe, compact and accurate device for pressure reducing and relief service on a hot water heating system. Simplifies and reduces cost of a hot water layout by displacing a costly expansion tank and necessary fittings. It filters and controls the water supply and safeguards the heating system against excessive pressure due to expansion. The pressure reducing unit is designed to permit a full flow of water and quickly fills the system when first installed. Instant adjustment to meet a varied range of working pressures can be made by simply changing the position of the adjusting screws found underneath the bronze caps on top of the bonnets of both the pressure reducing and relief units.

Constructed of cast or phosphor bronze and is rust, scale and trouble-proof. With little effort it can be instantly dissembled for inspection and reassembled quickly.

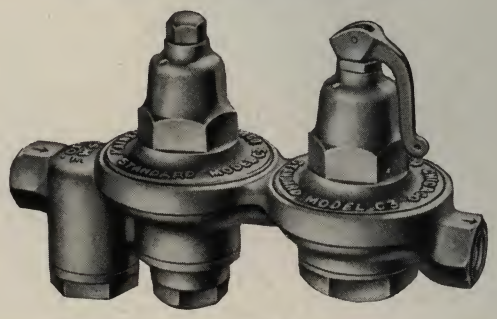
Tested at 60 pounds pressure and set at the factory to maintain 10 pounds on the system and to relieve the system when the pressure due to expansion reaches 30 pounds.

Dimensions over all: width, 10 inches; height, 5¾ inches.

Price, Complete for Mounting.....each **$12.00**

Model C-3 Kainer Standard Governors

For Hot Water Heating Systems



Designed for use on hot water heating systems to fill automatically and maintain the proper amount of water in the system, and to relieve excessive pressures created due to expansion of water.

Constructed entirely of non-corrosive metals; all-bronze body, pre-tinned phosphor bronze diaphragms, lead coated steel spring, and monel metal strainer screen.

Without removing bonnets, disturbing adjustments, or removing from the system, the seat discs and seats can be inspected, cleaned or renewed while the system is in operation. By merely removing the separable nuts provided at the base of the reducing and relief valves, the seat disc and seats are exposed for inspection. The base nut incorporated into the strainer permits easy cleaning of the filter screen.

Factory set to 10 pounds on the reducing side, and set to relieve at 29 pounds on the relief side.

Equipped with testing lever for quick tests, and otherwise complies with A.S.M.E. codes throughout.

Model C-3, Tapped ½ Inch.....each **$8.75**

Hoffman Hot Water Controlled Heat Apparatus

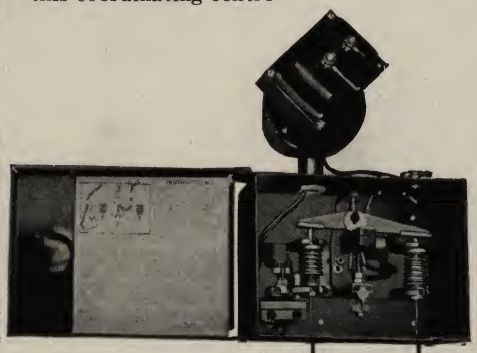
110-Volt, Single Phase, 60-Cycle

Control Valve

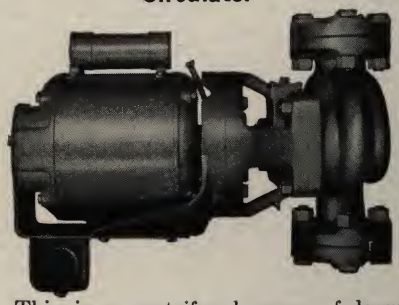
Opened and closed electrically as often as demands for more or less heat are made by either outdoor or water temperature bulbs. Installed in return line between by-pass and boiler; controls admission of hot boiler water into circulating system.

Temperature Controller

This is the mechanical brain of hot water controlled heat. Maintains a delicate balance between heat supply and outdoor temperature that assures uniform room temperature. All demands from the two temperature bulbs for more or less heat are passed through this coordinating control.



Circulator



This is a centrifugal pump of large capacity. It runs continuously, except when outdoor temperature rises above 65°, at which point pump is shut off automatically and does not start again until temperature goes below 65°.

Outdoor Temperature Bulb

This control is usually installed on casing of basement window where its connecting tube can be easily led to temperature controller.

Water Temperature Bulb

This is the control which keeps temperature of water in circulating system at a constant degree for any outdoor temperature. Installed in a tee close to boiler in supply main and connected by a capillary tube to temperature controller.

25 FEET

25 FEET

When ordering, specify electrical characteristics, minimum outdoor temperature and heat emission used in figuring system.

Complete information and prices on application.

Watts Pressure Regulators

A dependable regulator for water and air. For air-conditioning, drinking fountains, paint spraying, etc.

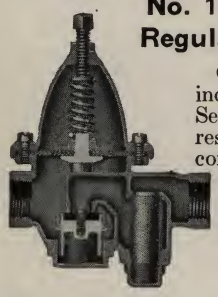
For initial pressures up to 300 pounds.

No. 26AC. Forged bronze with sensitive rubber diaphragm. Reduced pressure range, 1 to 90 pounds. Stock setting, to reduce 100 to 15 pounds.

No. 26 . Same general construction as No. 26AC, but with monel metal diaphragm and different spring for higher pressures. Reduced pressures, 25 to 175 pounds. Stock setting, to reduce 100 to 45 pounds.

		No. 26AC		No. 26	
Size	inches	1/8–1/4	3/8	1/8–1/4	3/8
Each		$3.20	4.00	3.70	4.50
Height	inches	4	4¼	4	4¼
Diameter	inches	2½	2½	2½	2½
Weight	pounds	1⅛	1¼	1⅛	1¼

No. 135 Watts Pressure Regulators and Strainers



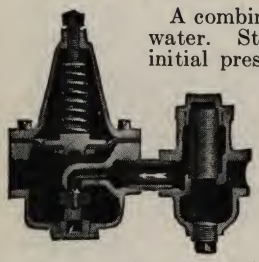
One-piece; for household service and industrial applications on water or air. Sensitive rubber diaphragm insures quick response to load demands. Heavy bronze construction.

For initial pressures up to 250 pounds. Valves set to reduce 100 pounds initial pressure to 45 pounds, with an adjustment range of 5 to 100 pounds reduced pressure, unless otherwise ordered.

Size	inches	½	¾	1
No. 135	each	$10.00	13.00	19.00
Length	inches	5	5¼	6
Height	inches	6½	7	7½
Weight	pounds	5	6	8

Valves outside listed ranges, and for oil service, add 15%.

No. 123S Watts Pressure Regulators and Strainers



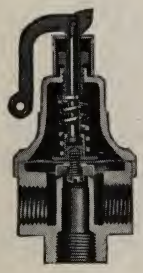
A combination regulator and strainer. For water. Stock setting to reduce 100 pounds initial pressure to 45 pounds. Valves furnished with stock settings unless otherwise specified.

The strainer protects the valve seat and disc against damage from rust and other foreign matter. Made of heavy bronze castings with stout perforated brass screen.

I.P.S. female inlet and male outlet on ½-inch size, all others have female connections.

Size ... in.	½	¾	1	1¼	1½	2	2½
No. 123S ... ea.	$12.00	16.00	22.00	32.00	50.00	67.00	88.00
End to End. in.	6½	7	8	9¼	11¼	13¾	15½
Weight ... lb.	3	5	8	10	17	25	36

No. 28L Watts Diaphragm Relief Valves



This valve is of the safety lever diaphragm type for house heating boilers.

It is ½-inch A.S.M.E. standard, constructed entirely of bronze, with laminated monel diaphragms and safety test lever.

Furnished set and sealed at 25–30 pounds only.

I.P.S.	inches	½
No. 28L	each	$5.00
Height	inches	5
Diameter	inches	2½
Weight	pounds	1½

No. 30 Watts Pressure Relief Valves

Listed by Underwriters' Laboratories

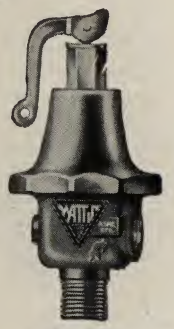
Regular Diaphragm Type

No. 30A

All bronze relief valve with flexible metal diaphragm.

The valve automatically relieves in case of excess pressure and reseats when conditions are restored to normal.

Used extensively to protect storage tanks against excessive pressure.



No. 30L A.S.M.E. Std.

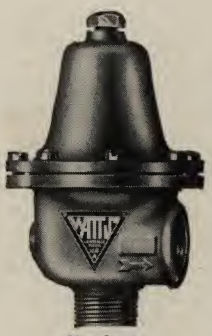
Weight of ½-inch size, 1¼ pounds; ¾-inch, 2¼ pounds.

No.	½-Inch Each	¾-Inch Each	Description	Pressure Range Pounds	Standard Setting Pounds
30A	$4.00	$6.50	Adjustable	50–150	125
30A	4.00	6.50	Adjustable	5–75	75
30L	4.50	7.00	Adjustable Lever	50–150	125
30L	4.50	7.00	Adjustable Lever	5–75	75

For house heating systems: No. 30L adjustable lever, 5–30 pounds pressure, standard setting 25–30 pounds.

No. 300 Watts Large Size Bronze Diaphragm Relief Valves

Listed by Underwriters' Laboratories



No. 300A

All bronze construction — laminated monel metal diaphragms.

Made of the finest non-corrosive materials. The diaphragms have several laminations of monel metal. Waterways are extra large.

No. 300L, A.S.M.E. Std.

Pressure, 30–125 pounds, 125-pound standard setting; or pressure, 5–30 pounds, 30-pound standard setting.

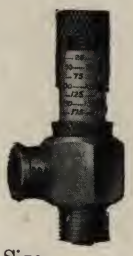
Furnished with 125-pound standard setting unless otherwise specified.

Size ... in.	1	1¼	1½	2
No. 300A, Adjustable Reg. ea.	$17.00	$24.00	$34.00	$45.00
No. 300L, Non-Adjustable, With Safety Test Lever each	19.00	27.00	38.00	50.00
Shipping Weight ... lb.	4¼	5½	7¾	12

No. 530C Watts Calibrated Relief Valves

Poppet Type

Range: 25–175 Pounds—Standard Setting 125 Pounds
Calibrations: 25 to 175 Pounds



For pressure relief only.

No test lever needed. Valve can be tested by turning adjusting cap counter-clockwise until water runs from valve, and then turned down to original setting. Equipped with locking device.

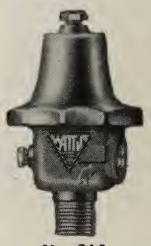
Valve has calibrated pressure adjustment scale. Can be quickly set to required relieving pressure without the use of a gauge.

Size	inches	½	¾
No. 530C	each	$2.50	2.70
I.P.S. Male Inlet	inches	½	¾
I.P.S. Female Drain	inches	⅜	⅜
Weight	pounds	⅝	¾

No. 31 Watts Diaphragm Pressure and Temperature Relief Valves

With Fusible Plug

Standard Setting, 125 Pounds



No. 31A

No. 31L, ASME Std.

Used for protection against excessive pressures and temperatures.

The temperature relief is obtained through the melting of the fusible plug.

For domestic hot water supply tanks, and other systems requiring pressure and temperature protection.

Size, ½ in. Standard setting, 125 lb. Temperature, 212°.

Two extra fusible plugs are furnished with each valve.

No. **31A**, Adjustable, 50–150 Lb.....each **$5.00**
No. **31L**, With Lever.....each **5.50**

Extra Plugs

No. **31A4–5**, Including Holder.....each **.30**

No. 32 Watts Vacuum Relief Valves

For vacuum relief of range boilers and for use with Nos. 40, 54 and 31 series relief valves where temperature, pressure and vacuum protection is required.

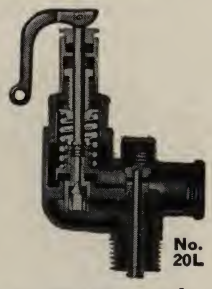
Size, ½ inch.

Weight, ⅛ pound.

No. **32**.....each **$1.20**

Series 20 Watts Pres-Tem-Vac Valves

No. 20A



No. 20L

Poppet type. Combines in one valve protection against pressure, temperature, and vacuum.

Fusible plug can be replaced without removing valve from line or disturbing pressure adjustment.

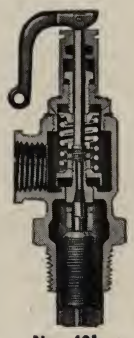
Size, ½ inch; ½-inch I. P. S. male inlet, ⅜-inch female drain. Range, 30-150 pounds.; standard setting, 125 pounds. Temperature, 212°.

No. **20A**, Adj., with 2 Extra Fusible Plugs.....each **$4.70**
No. **20L**, Adj. Lever, with 2 Ext. Fusible Plugs..each **5.40**
No. **54A5**, Fusible Plugs.....each **.20**

No. 40 Watts Autotherm Pressure and Temperature Relief Valves

Self-Closing

No. 40A



No. 40L

Has non-corrosive thermostatic bellows. Automatically relieves and reseats.

Size, ¾ inch.

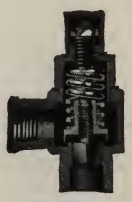
Pressure, 30–150 pounds; standard setting, 125 pounds, temperature, 212° F.

Weight, ⅞ pound.

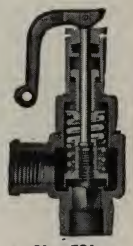
No. **40A**, Adj....each **$9.00**
No. **40L**, Adj. Lever .....each **10.00**

No. 53 Watts Pressure Relief Valves

Poppet Type



No. 53A



No. 53L

An all-bronze valve for the protection of equipment against excessive pressure. Used on air compressors, air tanks, and on domestic range boilers and storage tanks. Can be used as a by-pass relief valve on pump discharge lines.

Pressure, 30–150 pounds; standard setting, 125 pounds; ⅜-inch I.P.S. female drain.

Weight of ½-inch size, ⅝ pound; ¾-inch, ¾ pound.

No.	Adjustable 53A	Adjustable Lever 53L
½-Inch I.P.S. Male Inlet.....each	**$2.30**	**$3.00**
¾-Inch I.P.S. Male Inlet.....each	**2.50**	**3.20**

Klixon Self-Closing Pressure Relief Valves

No. B1590A

Designed to take care of the expansion which occurs when water is heated.

Can be installed on any hot or cold water line provided no check valve or cut-off valve is placed between the pressure relief valve and the heating source.

Made of fine materials and constructed according to an effective design.

When ordering specify pressure setting. Unless otherwise ordered, valve will be furnished set at 125 pounds.

Approximate maximum tank size, 500 gallons. Water inlet iron pipe size, ½ inch. Drain outlet iron pipe size, ⅜ inch. Can be furnished with drain outlet for ½-inch solder type fittings.

No. **B1590A**.....each **$1.25**
No. **B1591A**, with Release Handle.....each **1.75**

With Fusible Plug for Temperature Relief

For hot water line within 4 inches of tank or for tank tappings within 6 inches of top of tank. Relief capacity, 90,000 Btu. per hour input. Approximate maximum tank size, 90 gallons. Iron pipe size, ½ inch. Drain outlet iron pipe size ⅜ inch. Can be furnished with drain outlet for ½-inch solder type fittings.

No. **B1592**.....each **$1.50**
No. **B1593**, with Release Handle.....each **2.00**

Extra fuse plug assemblies are 12 cents each.

Klixon Self-Closing Temperature Relief Valves

Types to meet practically all installation requirements on all sizes of domestic boilers. Operated by a snap-acting disc—a scientifically calibrated bimetal disc that snaps the valve completely open the instant a dangerous temperature is reached in boiler. When danger is over, back snaps the valve to a drop tight seat.

No. 1C

Heavy duty disc is factory set, sealed in a corrosion-proof jacket.

Tank tappings should be within 6 inches of top of tank. Valves for hot water line must be installed within 4 inches of tank. Has drain outlet for ⅜-inch iron pipe size. Can be furnished with drain outlet for ½-inch solder type fittings. Available with fusible plugs when required.

When ordering, specify iron pipe size required.

No.	Each	*Location	Relief Cap. Btu. per Hr. Input	Approx. Max. Tank Size Gal.	Iron Pipe Size
1C	$3.38	Circulating Line	150,000	150	¾
1H	3.38	Hot Water Line	150,000	150	½, ¾
1T	3.38	Tank Tapping	150,000	150	½, ¾, 1
1CL	5.00	Circulating Line	200,000	500	¾, 1
1HL	5.00	Hot Water Line	200,000	500	¾, 1
1TL	5.00	Tank Tapping	200,000	500	¾, 1

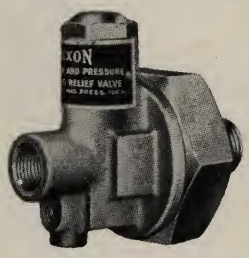
Extra fuse plug assemblies are 12 cents each.

*Location in tank tappings is recommended as giving the most accurate protection.

Klixon Self-Closing Temperature and Pressure Relief Valves

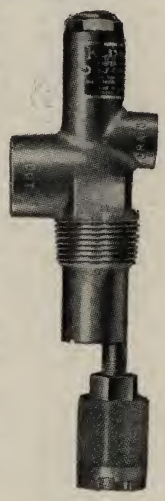
For all size domestic boilers and pipe fittings.

Temperature relief is insured by the snap-acting disc that snaps valve wide open at danger point and snaps it closed when boiler temperature cools to a safe degree.



Nos. 2C, 2H and 2T

Pressure relief provided by precision-calibrated heavy duty spring valve that opens the line when the pressure becomes dangerous and closes it when safe.



Nos. 2TM and 2TMH

Tank tappings should be within 6 inches of top of tank. Valves for hot water line must be installed within 4 inches of tank.

Has drain outlet for ⅜-inch iron pipe size. Can be furnished with drain outlet for ½-inch solder type fittings.

When ordering, specify iron pipe size and state pressure setting.

Unless otherwise ordered, valve will be furnished set at 125 pounds.

Without Handle No.	Without Handle Each	With Release Handle No.	With Release Handle Each	*Location	Relief Capacity Btu. per Hr. Input	Approx. Maximum Tank Size Gallons	Iron Pipe Size Inches
2C	$4.50	2CH	$5.00	Circulating Line	150,000	150	¾
2H	4.50	2HH	5.00	Hot Water Line	150,000	150	½, ¾
2T	4.50	2TH	5.00	Tank Tapping	150,000	150	½, ¾, 1
2TM	4.50	2TMH	5.00	Tank Tapping	75,000	75	1

*Location in "tank tappings" is recommended as giving most accurate protection.

No. C-152 Kitco Combination Boiler Drain and Pressure Relief Valves

Operating range, 100 to 150 pounds.

Factory-set. Will relieve the pressure at the highest number (pounds) marked on the bonnet dial. The indicator handle points to the pounds pressure at which the valve will relieve.

Can be furnished with male or female inlet.

I.P.S.	inches	½	¾
No. C-152	each	$1.45	1.55

Hot Dog Fire Pot Water Heaters

Sloping construction allows dead coals to fall away as the fire burns down permitting free passage of hot gases around the heater.

Web furnishes added heating surface and strength. Poker can not hook in the loop and ashes can not pack in it.

Nominal capacities depend on fuel and position in firepot.

Has ¾ or 1-inch tappings on 9-inch centers which fit practically all boilers.

No.		1	2
Brass	each	$6.15	$7.95
Iron	each	2.55	2.90
Capacity	gallons	20 to 40	40 to 60

Excelso Fin-Pin Water Heaters

An efficient hot water supply heater for down in the fire pot of warm air furnaces and hot water heating boilers.

The fins allow air passage around heater, thus avoiding deadened fire.

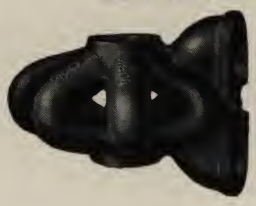
Well designed for quick circulation. Easy to install.

The heater has 4 tappings to meet all requirements.

Made in cast iron or brass.

No.	Iron Each	Brass Each	Capacity Gallons	Tappings Inches
30	.....	.....	30	1
40	.....	.....	40	1

Excelso Phaeton Water Heaters



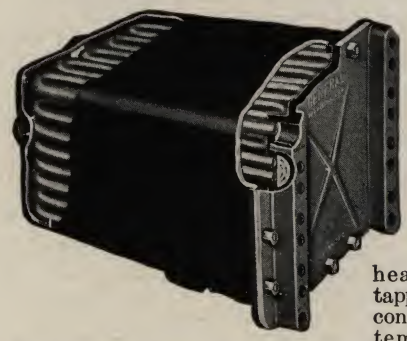
Used as a water heater and for warming auxiliary radiation in enclosed verandas, bathrooms, kitchens or wherever extra warmth, not supplied by the regular heating plant, is required.

Installed above the fire and provided with four tappings, two side, one top and bottom.

Diam. In.	Cast Iron Each	Brass Each	Ht. In.	Size Tappings In.	C. to C. of Side Outlets In.	Tank Cap. Gal.	Hot Water Rad. Cap. Sq. Ft.	Ship. Wt. Pounds Cast Iron	Ship. Wt. Pounds Brass
6	....	....	3½	1	2½	30	40	6	7
8	....	....	4½	1	2½	45	75	11	12
10	....	....	5¼	1½	3	80	100	18	20
12	....	....	6	2	3½	100	150	30	32
15	....	....	7	2½	4½	150	250	60	70
18	....	....	8	3	5½	250	400	85	100

General Tankless Indirect Water Heaters

Max. Safe Steam Work. Pressure: Shell, 15 Lb.; Coil, 250 Lb.



Furnishes an instantaneous supply of clean, hot water. Installed on outside of boiler. Can be used with coal or oil fired steam, hot water or vapor systems.

Shell through which boiler water circulates is of heavy cast iron with tapped holes for boiler connections and boiler temperature control. Unit through which domestic water passes is made of copper tubing bent into a series of horizontal U shape coils which are joined by cast brass headers. Tubes are permanently expanded into a tube sheet. By installing two heaters hooked up in parallel, greater capacities can be obtained as required.

Use of boiler water at 212° F. increases heater capacity approximately 33⅓ per cent. Use of boiler steam at 5 pounds increases heater capacity approximately 50 per cent. Use of boiler steam at 15 pounds increases heater capacity approximately 100 per cent. For high pressure jobs, specify special steel shell and maximum steam pressure.

No.	Each	Cap. 45°-140°, Boiler at 180° GPM.	Coil Surface Square Feet	Pipe Connection Inches Fixture	Pipe Connection Inches Boiler	Ht. In.	Width In.	Lgth. In.	Wt. Lb.
99	.....	3½	11½	¾	2	9½	14⅛	18¼	76
100	.....	3¾	12	¾	2	9½	14	17	95
101	.....	5	15	¾	2	11⅝	14	17	130
102	.....	8	24	¾	2½	11⅝	14	23	170
103	.....	15	45	1¼	*2½, †3	18	18	30	300
105	.....	20	60	1½	*3, †4	18	18	38	390
106	.....	35	105	2	*2, †4, 6	19	19	90	740

*Inlet. †Outlet.

Excelso Indirect Water Heaters

Consists of cast iron shell with heavy copper coil within. Nos. 10, 011, 012 and 012-A have cover opening on one side. Nos. 13 to 48 inclusive have cover opening at top, and coils for these heaters are replaceable. Nos. 10 and 012A have two unions while Nos. 011, 012 and 13 to 16 inclusive have three unions. All other sizes tapped I. P. T.

Single Coil

When used with a steam or vapor boiler, both shell openings are connected below the water line. This allows the boiling water (not steam) from the boiler to flow through the shell, heating the domestic water circulating in the copper coil. Can be connected to any steam or vapor heating boiler. May also be used with live steam.

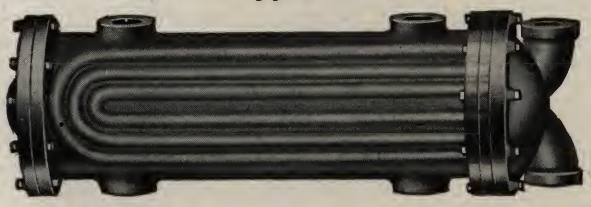
No.	Each	Lgth. In.	Wdth. In.	Diam. In.	Shell Openings In.	Coil Openings In.	C. to C. Coil Openings In.	Cap. Tank Gals. Heater Below Water Line *	†	‡	Ship. Wt. Lb.
Single Coil											
10	.....	8⅞	..	5¾	1	¾	5½	30	....	40	10
011	.....	11½	..	5¾	1	¾	6 5/16	30	....	50	12
012	.....	13½	..	5¾	1	¾	8 5/16	40	....	75	14
012A	.....	14¾	..	5¾	1	¾	11 3/16	52	30	100	17
13	.....	14¼	..	6½	1½	1	7⅝	66	40	125	31
14	.....	18	..	6½	1½	1	11⅜	82	52	160	37
14A	.....	20⅝	..	6½	1½	1	14	100	66	200	42
15	.....	21⅞	..	6½	1½	1	15¼	120	82	225	44
16	.....	26	..	6½	1½	1	19¼	144	100	250	56
Double Coil											
25	.....	12½	..	9	2	1½	6⅜	160	120	300	65
26	.....	15	..	9	2	1½	8⅞	192	144	400	70
27	.....	19	..	9	2	1½	13⅝	300	160	600	90
28	.....	23¼	..	9	2	1½	17¾	400	192	750	100
Triple Coil											
34	.....	18¾	..	13¾	3	2½	11½	500	300	900	210
35	.....	21	..	13¾	3	2½	13⅝	600	400	1200	230
36	.....	25	..	13¾	3	2½	17¾	800	500	1500	255
37	.....	29	..	13¾	3	2½	21½	1000	600	1750	280
Dual Coil											
42	.....	21½	26	13¾	4	3	13⅝	1200	1000	2000	425
44	.....	25¼	26	13¾	4	3	17¾	1600	1200	2500	490
46	.....	29¼	26	13¾	4	3	21½	2000	1600	3000	500
48	.....	35¼	26	13¾	4	3	27½	2500	2000	4000	620

*Capacities based on temperature rise 40°F. to 140°F. in 3 hours, boiler water at 212°F.

†Capacities based on temperature rise 40°F. to 140°F. in 3 hours, boiler water at 180°F.

‡Capacities based on temperature rise 40°F. to 140°F. in 3 hours. Steam at 0 lb. pressure.

General U-Type Water Heaters



This heater has a flange on end to allow cleaning without disconnecting any pipes.

Size No.	Cap. Gals. Heated In 3 Hrs. From 40° to 140° Coal Fired Boiler Water 212°	Automatically Fired Boiler Water 180°	Automatically Fired Boiler Water 160°	Cap. Live Steam 0 Lbs. Pressure	Pipe Size Inches Tank Conn.	Pipe Size Inches Boiler Conn.	Over All Dimensions Inches	Wt., Lb.
U- 35	500	350	175	900	2	2½	11 x32	180
U- 45	600	400	200	1100	2	2½	11 x38	200
U- 55	800	500	250	1300	2	2½	11 x44	230
U- 65	1000	600	350	1400	2½	2½	13½x43	325
U- 75	1200	900	400	1650	2½	2½	13½x51	360
U- 95	1400	1100	500	1800	3	3	16 x47	500
U-105	1800	1400	650	2200	3	3	16 x56	600
U-106	2200	1800	800	2800	3	3	16 x85	620

Can also be furnished with 4 pass head for instantaneous heating. Details furnished upon request.

Prices upon application.

B&G Indirect Water Heaters

For any steam, vapor, or hot water heating boiler. Particularly well adapted to installation on cast iron sectional boilers, where it is not possible to install an internal submerged heater. With proper electrical controls, heater will furnish an ample supply of hot water in summer and winter.

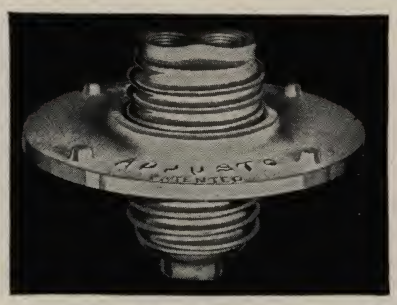
For best results, storage tank should be horizontal and as close to the ceiling as possible. On steam boilers, install with top of heater close to water line. On hot water heating systems, keep top level with or above boiler top. If tank is low or small, heater should be increased for faster recovery. Jacket is of sturdy construction. Tubes, heads, and all parts in contact with domestic water are of rustproof bronze or copper. Coils are easily removed. Single Coil heater has two heavy brass unions.

For year around hot water on automatically fired installations select heater size on 180° boiler water temperature.

No.	Each	Cap. Gallons in 3 Hrs. Boiler Water at 212°	Boiler Water at 200°	Boiler Water at 180°	Max. Lgth. In.	Max. Width In.	Boiler Conn. In.	Service Water Conn. In.	Approx. Ship. Wt. Lb.
Single Coil Heaters									
30	**$7.56**	30	25	18	11⅞	5⅛	1	¾	12
***40**	**11.74**	40	33	24	12⅞	5⅛	1	¾	13
52	**14.28**	52	42	31	14⅞	5⅛	1	¾	15
70	**17.36**	70	57	43	16½	5 3/16	1¼	¾	17
90	**20.70**	90	74	55	19	7⅛	1½	1	39
100	**23.70**	100	82	61	20⅜	7⅛	1½	1	43
120	**28.00**	120	98	73	23	7⅛	1½	1	47
150	**32.00**	150	123	92	25¼	7⅛	1½	1	52
Double Coil Heaters									
160	**38.50**	160	131	98	12¾	10½	2	1½	61
200	**44.80**	200	164	122	15⅜	10½	2	1½	72
300	**58.80**	300	246	183	20	10½	2	1½	94
400	**72.60**	400	328	244	24	10½	2	1½	101
500	**89.60**	500	410	305	27¼	10½	2	1½	122
Horizontal Tube Heaters									
600	**98.00**	600	492	366	26	13¾	3	2½	98
800	**117.60**	800	656	488	29¼	13¾	3	2½	100
1000	**151.20**	1000	820	610	32¾	13¾	3	2½	102
1200	**228.00**	1200	984	732	47¾	18	4	3	217
1600	**243.60**	1600	1312	976	54¾	18	4	3	238
2000	**280.00**	2000	1640	1220	62⅞	18 5/16	6	3	260
2500	**328.00**	2500	2050	1525	71	18 5/16	6	3	290
3000	**576.00**	3000	2460	1830	81⅛	18 5/16	6	3	320

*For marine use—available with brass instead of cast iron shell and tested to 125 pounds working pressure. Capacities and dimensions same as standard; price, $37.30.

Adjusto Direct Water Heaters and Boosters



An adjustable direct water heater. Used in all types of residential heating plants and with all types of fuel; increases boiler capacity of residential heating plants.

To be placed in center of firepot. Threads give it extra large heating surface.

Quantity of hot water is regulated by revolving circular baffle plate. Flames and heat currents strike heat-resisting iron baffle and are spread by baffle plate to walls of heating chamber. Top and bottom 1-inch tappings.

No.	**1**	**2**	**101B**	**102B**
Each	**$9.90**	**12.25**	**16.50**	**21.00**
Height of Body.....inches	7	10	7	10
Diameter of Body.....inches	3¾	4½	3¾	4½
Diameter of Baffle.....inches	9	10	9	10
Body Metal	Iron	Iron	Brass	Brass
Min. Hot Water Storage Recom. gal.	30	50	40	60
Radiation, Hot Water, Average Conditions.....sq. ft.	70	140	90	180
Shipping Weight.....pounds	14	20	14	20

Thrush Straight Tube Water Heaters

Designed and constructed to operate with high or low steam pressures. Installed either above or below boiler water line. Also for year around operation with hot water heating plants equipped with Thrush Flow Control System.

Boiler water entering top of heater and leaving bottom at opposite end assures maximum heat transfer. Rated by square inches of copper tube heating surface, tests show their actual capacity exceeds their ratings by 15% to 20%.

Built with sturdy, one-piece cast housings—no soldered joints to leak or come apart. Has copper tubes.

No baffles are needed because water enters at one end and leaves heater at other end. This important feature assures higher heat exchange efficiency. Service water passes back and forth through a series of multiple tubes surrounded by the heating medium, assuring efficient heat absorption.

		Cap., Gal. of Water Heated From 40° to 140° in 3 Hours			Hot Water Radiation Capacities, Sq. Ft.			Pipe Connections Inches		
No.	Each	Heater with Water Boiler at 180°	Heater Below Water Line Boiler Water at 212°	Heater in Live Steam 0 Lbs. Press.	Heater with Water Boiler at 180°	Heater Below Water Line Boiler Water at 212°	Heater in Live Steam 0 Lbs. Press.	Boiler	Tank	Ship. Wt. Lb.
24	$7.80	24	40	75	20	33	50	1	¾	16
31	9.33	31	52	100	26	43	65	1	¾	18
40	11.33	40	66	125	33	55	82	1¼	1	22
49	13.66	49	82	150	41	68	100	1¼	1	26
60	15.66	60	100	190	50	83	125	1¼	1	29
72	18.33	72	120	225	60	100	150	1¼	1	32
86	21.33	86	144	275	72	120	180	1¼	1	35
96	25.66	96	160	300	80	130	200	2	1¼	42
120	28.00	120	200	375	100	170	250	2	1¼	45
150	32.00	150	250	475	125	210	310	2	1½	51
180	36.00	180	300	560	150	250	375	2	1½	57
240	48.00	240	400	750	200	330	500	2½	2	85
300	55.33	300	500	940	250	420	625	2½	2	100
360	64.00	360	600	1150	300	500	750	3	2½	116
420	65.00	420	700	1300	350	580	875	3	2½	130
480	74.33	480	800	1500	400	660	1000	3	2½	143

Galvanized Expansion Tanks

For Hot Water Heating Systems

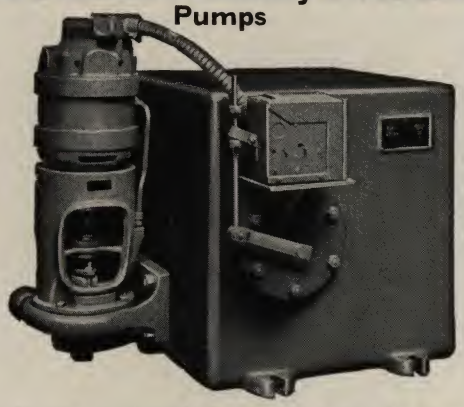
Trimmings are extra.

Size Inches	Capacity Gallons	Each
12x20	10	$8.00
12x30	15	9.00
14x30	20	12.50
16x30	26	14.00
16x36	32	15.00
16x48	42	16.50

Ideal Arcola Expansion Tanks

With Trimmings.....each .....

Type E Hoffman-Economy Condensation Pumps



For returning condensate from any gravity heating system where return lines are approximately 12 inches or more above the pump floor level.

Pump is vertical flexible coupled unit. Bronze impeller. Renewable bronze wearing rings. Stainless steel shaft. Renewable bearings, ball thrust bearing. Working assembly removable without breaking pipe connections. Pump unit bolted to the cast iron, corrosion-resistant tank, which eliminates any piping between pump and tank.

Motor located high above floor. Ball bearing, 40° continuous duty, 1750 rpm. with ample overload capacity.

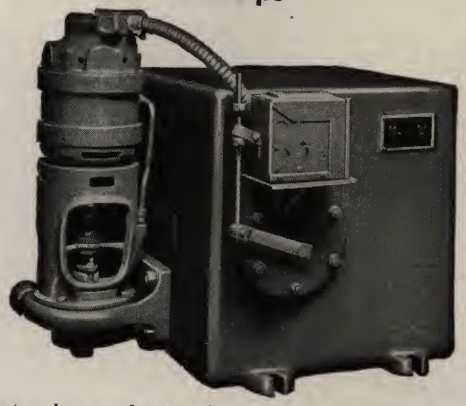
Float switch is heavy duty type with double break silver butt contacts. Float switch operating mechanism adjustable for various water levels. All operating parts of corrosion-resisting material. Flexible coupling between pump and motor. Another motor may be substituted for original motor without disassembling the pump.

In ordering state: type of pump required; total square feet of direct cast iron radiation or equivalent; electric current available—a.c. or d.c.; exact voltage; if a.c. specify whether 1, 2 or 3-phase and also whether 25, 50 or 60-cycle; maximum pressure against which pump must discharge; total length and size of piping between pump outlet and boiler; and difference in elevation between pump outlet and boiler water line.

Pump and Type No.	Capacity Sq. Ft. Direct C.I. Rad. or Equiv.	Cap. Lbs. Condensate Per Hr.	Dis. Press. Lbs. Per Sq. In. at Pump Outlet	Pump Cap. Gals. Per Min.	Receiver Cap. Gals.	Size Inlet In.	Size Discharge Outlet In.	Motor Hp.
10	1000	250	10	1½	10	2	1	¼
11	1000	250	15	1½	10	2	1½	½
12	1000	250	20	1½	10	2	1½	¾
20	2000	500	10	3	10	2	1	¼
21	2000	500	15	3	10	2	1½	½
22	2000	500	20	3	10	2	1½	¾
40	4000	1000	10	6	26	2	1	¼
41	4000	1000	15	6	26	2	1½	½
42	4000	1000	20	6	26	2	1½	¾
60	6000	1500	10	9	26	2	1	¼
61	6000	1500	15	9	26	2	1½	½
62	6000	1500	20	9	26	2	1½	¾
80	8000	2000	10	12	26	2	1	¼
81	8000	2000	15	12	26	2	1½	½
82	8000	2000	20	12	26	2	1½	¾
100	10000	2500	10	15	26	2	1	¼
101	10000	2500	15	15	26	2	1½	½
102	10000	2500	20	15	26	2	1½	¾
150	15000	3750	10	22½	43	2½	1	¼
151	15000	3750	15	22½	43	2½	1½	½
152	15000	3750	20	22½	43	2½	1½	¾
153	15000	3750	30	22½	43	2½	1½	1½
200	20000	5000	10	30	43	2½	1½	½
201	20000	5000	15	30	43	2½	1½	¾
202	20000	5000	20	30	43	2½	1½	1
203	20000	5000	30	30	43	2½	1½	1½
250	25000	6250	10	37½	43	3	1½	½
251	25000	6250	15	37½	43	3	1½	¾
252	25000	6250	20	37½	43	3	1½	1
253	25000	6250	30	37½	43	3	1½	2
300	30000	7500	10	45	60	3	1½	½
301	30000	7500	15	45	60	3	1½	¾
302	30000	7500	20	45	60	3	1½	1
303	30000	7500	30	45	60	3	1½	2

Information on capacities 40000 to 65000 sq. ft. on request.

Type EC Hoffman-Economy Condensation Pumps



For returning condensate from any gravity heating system where return lines are approximately 12 inches or more above the pump floor level. Operated at a high speed.

Motor located high above floor. Ball bearing, 40° continuous duty, 3450 rpm. with ample overload capacity. Pump unit bolted to cast iron, corrosion-resistant tank.

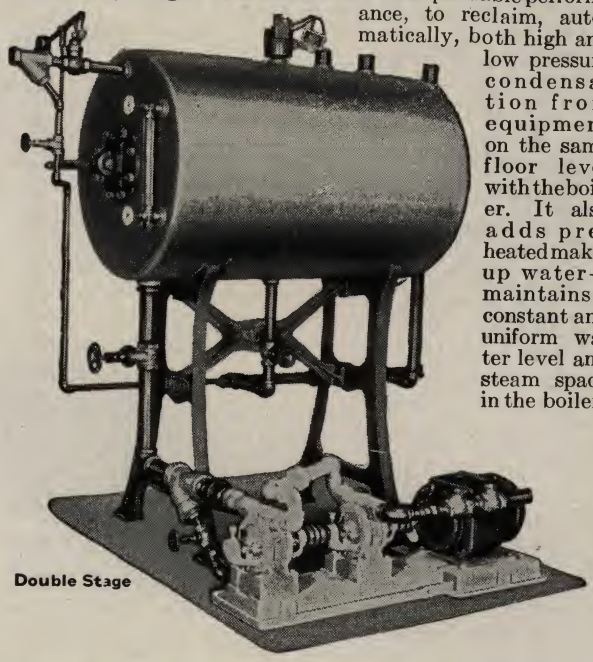
In ordering state: type of pump required; total square feet of direct cast iron radiation or equivalent; electric current available—a.c. or d.c.; exact voltage; if a.c. specify whether 1, 2 or 3-phase and also whether 25, 50 or 60-cycle; maximum pressure against which pump must discharge; total length and size of piping between pump outlet and boiler; and difference in elevation between pump outlet and boiler water line.

Pump and Type No.	Cap. Sq. Ft. Direct C.I. Rad. or Equiv.	Cap. Lbs. Condensate Per Hr.	Dis. Press. Lbs. Per Sq. In. at Pump Outlet	Pump Cap. Gals. Per Min.	Receiver Cap. Gals.	Size Outlet In.	Size Discharge Outlet In.	Motor Hp.
11	1000	250	15	1½	10	2	1	½
12	1000	250	20	1½	10	2	1	¾
21	2000	500	15	3	10	2	1	½
22	2000	500	20	3	10	2	1	¾
41	4000	1000	15	6	26	2	1	½
42	4000	1000	20	6	26	2	1	¾
43	4000	1000	30	6	26	2	1	¾
61	6000	1500	15	9	26	2	1	½
62	6000	1500	20	9	26	2	1	¾
63	6000	1500	30	9	26	2	1	¾
64	6000	1500	40	9	26	2	1	1
65	6000	1500	50	9	26	2	1½	1½
66	6000	1500	60	9	26	2	1½	2
81	8000	2000	15	12	26	2	1	½
82	8000	2000	20	12	26	2	1	¾
83	8000	2000	30	12	26	2	1	¾
84	8000	2000	40	12	26	2	1	1
85	8000	2000	50	12	26	2	1½	1½
86	8000	2000	60	12	26	2	1½	2
101	10000	2500	15	15	26	2	1	½
102	10000	2500	20	15	26	2	1	¾
103	10000	2500	30	15	26	2	1	1
104	10000	2500	40	15	26	2	1	1½
105	10000	2500	50	15	26	2	1½	1½
106	10000	2500	60	15	26	2	1½	3
151	15000	3750	15	22½	43	2½	1	½
152	15000	3750	20	22½	43	2½	1	¾
153	15000	3750	30	22½	43	2½	1	1
154	15000	3750	40	22½	43	2½	1	1½
155	15000	3750	50	22½	43	2½	1½	2
156	15000	3750	60	22½	43	2½	1½	3
203	20000	5000	30	30	43	2½	1½	1½
204	20000	5000	40	30	43	2½	1½	1½
205	20000	5000	50	30	43	2½	1½	2
206	20000	5000	60	30	43	2½	1½	3
253	25000	6250	30	37½	43	3	1½	1½
254	25000	6250	40	37½	43	3	1½	2
255	25000	6250	50	37½	43	3	1½	3
256	25000	6250	60	37½	43	3	1½	3
303	30000	7500	30	45	60	3	1½	1½
304	30000	7500	40	45	60	3	1½	2
305	30000	7500	50	45	60	3	1½	3
306	30000	7500	60	45	60	3	1½	3

Information on capacities 40000 to 65000 sq. ft. on request.

Kisco-Bilt Return-To-Boiler Systems

Correctly designed and constructed for dependable performance, to reclaim, automatically, both high and low pressure condensation from equipment on the same floor level with the boiler. It also adds preheated make-up water—maintains a constant and uniform water level and steam space in the boiler.



Double Stage

Reduces fuel consumption; increases boiler capacity and efficiency; adds years of life to the boiler: reduces maintenance costs; protects boiler against expensive low water conditions; does not require live steam for its operation.

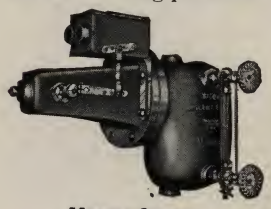
Condensation is hot, distilled water, free of the lime and scale forming ingredients which reduce boiler efficiency and cause corrosion. Feeding the boiler with water at 200–210° temperature not only reduces the firings and fuel consumption from 10 to 15 per cent, but also increases the boiler capacity proportionately.

The Kisco Return-To-Boiler System consists of the following assembly: exclusively designed receiver with Kisco heat economizers; make-up valve — sight glass; Kisco double checker; cradles and stand; balanced lever combination switch control with bell alarm or cut-out; turbine pump; sediment strainers; and line starter for three phase.

The hot water feed pump is constructed to handle high temperature water against pressure. The channel ways and parts have been carefully computed to avoid frictional losses and overload.

The heavy-duty motor is designed expressly to operate with this pumping unit. Extra heavy condensation receiver. Heavy cast iron receiver stand, wide spread at the base, fitted with double cross braces. Make-up valve is mounted on the outside of the receiver, and operated by a copper ball float extending into the receiver; positive in action; compound leverage prevents leakage or unbalanced performance. Heat economizer eliminates flash and vent losses and utilizes all the heat by discharging the condensation below the surface of the water in the receiver. The double-checker, if the switch control fails to function, starts the motor and pump in operation and sounds an alarm signal.

Can be supplied in models for boilers from 1 to 740 hp., and for working pressures from 15 to 150 pounds.



Master Control

Kisco Master Combination Water Level Switch Control. For systems handling boilers above 25 hp. Redesigned: simple, yet positive, dependable, and rugged.

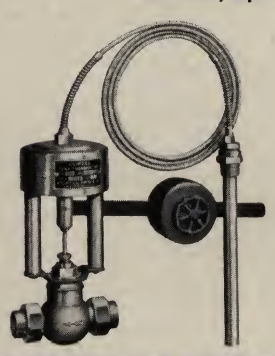
Listed by Underwriter's Laboratories, Inc.

Kisco Standard Boiler Level Switch Control. For systems handling boilers up to 25 hp. Designed for high pressure, it provides dependable, accurate service, controlling pumping unit. Equipped with automatic low-water alarm signal or fuel cut-out.

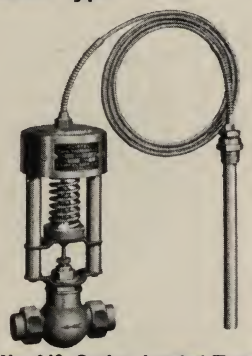
Complete Information and Prices Furnished upon Request

Klipfel Tank Thermostats

No. 648, Weight and Lever Type
No. 649, Spring Loaded Type



No. 648, Weight and Lever Type



No. 649, Spring Loaded Type

Generally used to maintain hot water or liquids in steam heated tanks at any desired temperature between 140° and 180°F.

Sizes 1½ inches and smaller have bronze bodies, union ends. Sizes 2 inches and larger have semi-steel bodies, flanged ends only. Standard length flexible tube is 8 feet.

No. 648 weight and lever thermostat is especially adapted where close regulation with easy adjustment of temperature is needed. Because the loading force of the weight and lever is constant, only a small change in bulb temperature is required to produce the full valve travel. A roller on the lever reduces friction. By loosening the lock nut on the packing box, the superstructure and lever may be rotated to any position.

No. 649 spring loaded thermostat is a more compact valve suited to general use and to restricted spaces, marine use, and wherever a lever is objectionable. It may be inverted or installed in a vertical pipe line. The nut at the bottom of the spring is equipped with a ball thrust bearing for quick and easy adjustment of spring tension.

When ordering, state number, pipe size, inlet steam pressure, operating temperature range at bulb, length of flexible tube, if shorter or longer than 8 feet, and general purpose for which thermostat is to be used.

Size In.	Each	End to End In.	Ctr. of Pipe To Top of Tube Bend, In. No. 648	No. 649	Tank Bushing In.	Lgth. Bulb In.	Max. Steam Press. Lb.	Ship. Weight —Pounds— No. 648	No. 649
½	$110.00	5⅝	13	15	1	12	150	54	36
¾	115.00	5⅞	13½	15½	1	15	150	55	37
1	125.00	6⅜	14	16	1	16	150	56	38
1¼	135.00	6¾	14½	16½	1	18	150	57	39
1½	145.00	7⅞	15	17	1	20	150	58	40
2	160.00	7½	18	20	1	22	125	73	55
2½	170.00	9	18¼	20¼	1	22	125	86	68
3	180.00	9¾	18½	20½	1¼	22	125	103	85
3½	200.00	10⅛	18¾	20¾	1¼	24	125	123	105
4	220.00	10⅝	19½	21½	1¼	24	125	138	120
5	300.00	12⅛	22½	24½	1¼	24	125	180	160

For Installations Requiring Tight Closing Inner Valves

Ball Type Inner Valve
No. 448, Weight and Lever Type
No. 449, Spring Loaded Type

With ball type, tight closing inner valves, for use on small storage tanks, kettles, vulcanizers, and other equipment where leakage of steam through the valve, after proper temperature is reached, would cause overheating and possible damage. Made only in sizes ⅜ to 1¼ inches inclusive, bronze bodies, monel seat, stainless steel ball and union ends.

Prices and complete information on application.

Cup Disc Inner Valve
No. 548, Weight and Lever Type
No. 549, Spring Loaded Type

With cup disc inner valves, developed to provide a tight closing or dead end valve on high pressure applications and in larger sizes than those for which the ball type is offered. Made in sizes ¾ to 4 inches inclusive. Sizes 1½ inch and smaller have bronze bodies, monel and stainless steel trimmings and union ends. Larger sizes have semi-steel bodies, monel facing and are made flanged ends only.

Prices and complete information on application.

No. 930 Sylphon Temperature Regulators

Lever Type

This regulator is used for controlling the temperature of liquids. It is adapted for hot water service heaters and open or closed tanks.

The No. 930 is often preferred in special processes requiring frequent changes in temperature setting, as the lever bar may be calibrated in degrees.

All valves are double-seated balanced type with bronze discs and seats.

Furnished regularly to close valve with rising temperature. On special order at slight additional cost, regulators will be furnished to open valve with rising temperature.

Bronze Body—Steel Union

Size Valve Inches	Each	Pressure Limit Pounds	Bulb Threading I.P. Std. Inches	Bulb Length Inches	Length Lever Bar Inches	Shipping Weight Pounds
½	$60.00	250	1	15½	26	58
¾	65.00	250	1	15½	26	59
1	70.00	175	1	15½	26	60
1¼	75.00	250	1	15½	26	78
1½	80.00	225	1	15½	26	80
Iron Body—*Flanged						
2	$90.00	85	1¼	15½	26	125
2½	95.00	65	1¼	15½	26	146
3	100.00	85	1¼	23½	27¼	185
4	120.00	60	1¼	23½	27¼	213
5	175.00	50	1¼	23½	27¼	264
6	225.00	40	1¼	35½	27¼	363
8	275.00	15	1¼	35½	27¼	590
10	600.00	10	1¼	35½	27¼	650

*Can be fitted with companion flanges on special order, at additional cost.

No. 931 Sylphon Temperature Regulators

For controlling temperature of liquids. This regulator is largely used in industrial processes where one definite temperature is required from day to day. It is also widely used to control temperature of hot water storage tanks, etc.

It has a cast-iron frame, frame cap, adjustment wheel and bellows cover, and a steel adjustment spring. The No. 12B bulb is standard. It is made of copper and its fittings are of brass. Brass armor covers the flexible copper tubing between the bulb and the regulator proper.

The bulb is to be inserted in the vessel so it will contact the liquid under control. A strainer should be installed ahead of the regulating valve. It can be set to control at any point within its temperature range by turning wheel. Available in 40° and 60°F. ranges, from 40° to 350°F. Specify range desired.

Bronze Body—Steel Union

Size Valve Inches	Each	Pressure Limit Pounds	Bulb Threading I.P. Std. Inches	Bulb Length Inches	Shipping Weight Pounds
½	$60.00	250	1	15½	49
¾	65.00	250	1	15½	50
1	70.00	250	1	15½	53
1¼	75.00	250	1	15½	64
1½	80.00	225	1	15½	68
Iron Body—*Flanged					
2	$90.00	85	1¼	15½	108
2½	95.00	65	1¼	15½	129
3	100.00	55	1¼	15½	170
4	120.00	40	1¼	15½	200
5	175.00	30	1¼	15½	250

*Can be fitted with companion flanges on special order, at additional cost.

Sunbeam Temperature Control Equipment

For Air Conditioners

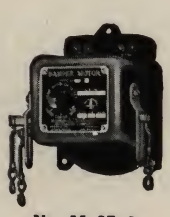
Nos. T-81-A, T-11-A and T-21-A Plain Thermostat

Nos. T-105-A and 205-A Night and Day Electric Clock Thermostat

No. H-12 Humidistat

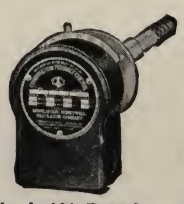
No. V-837-B Solenoid Water Valve

No. R-155-A Control Box



No. M-87-A Damper Motor

No. R-19-C Relay



No. L-101-B and L-401-B Blower, Limit and High Cut-In Switch

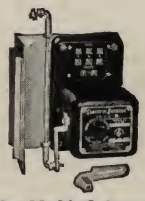
No. L-101-A and L-401-A Blower and Limit Switch

No. LA-412-A Blower Switch

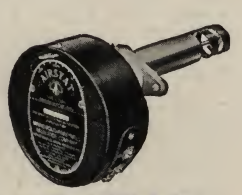
No. R-116-A Stack Control (Protectorelay)

No. T-29-A Night and Day Thermostat, for Zone Control

Nos. W-1-A and W-2-A Power Box, for Zone Control



No. M-26-C Duct Damper Motor, for Zone Control



No. L-222-A High Cut-In Relief Switch, for Zone Control

Temperature control equipment, for any degree of regulation that may be desired by the homeowner, is available with Sunbeam Air Conditioning Units. Control combinations are provided for oil or coal, hand or stoker fired.

From the simplest to the most sensitive type of regulation, the precision equipment illustrated above, will provide it effectively.

Complete Information and Prices on Request

Control Circuit Information

Series 10—Refers to the control circuit in which two contacts are made in sequence to start, and break in reverse sequence to stop. This circuit is particularly adaptable to relay operations. The thermostat and controller wiring is three-wire, low voltage.

Series 20—Refers to the control circuit in which one circuit is made when the controller calls for heat and another circuit is made when the controller is satisfied. A Series 20 device does not return to the Off position on power failure. This circuit is particularly adaptable to motor operation. The thermostat and controller wiring is three-wire, low voltage, but is entirely different from Series 10.

Series 40—Covers devices used in two-wire line voltage circuits, for special applications and for direct control.

Series 50—Refers to devices that are non-electrical.

Series 60—Refers to the control circuit in which one contact is made for starting line voltage controlled equipment and another contact is made for stopping line voltage controlled equipment. In other words, Series 60 is line voltage equivalent to Series 20.

Floating control typifies the circuit wherein a reversing motor will move in the direction determined by the thermostat or controller, as long as the contacts are made, and will be reversed as the contacts in the thermostat are reversed; with a stand-by occuring when both circuits in the thermostat or controller are broken.

Series 80—Refers to devices having a two-wire low voltage control circuit. In other words, Series 80 is the low voltage equivalent for Series 40.

Series 90—Applies to modulating or proportioning equipment which provides for modulation of the device under control in proportion to the demands of the thermostat or controller. This is accomplished through the use of potentiometer type instruments.

Minneapolis-Honeywell Chronotherms

A sensitive low voltage electric clock room thermostat. Can be used with or without heat acceleration.

For use with all Minneapolis-Honeywell low voltage Series 10 and 20 motors, relays, valves and motor valves. Heat acceleration, No. T105A improves the heat distribution in the heating plant. Electric clock is completely automatic. It keeps accurate time and automatically lowers temperature at night and restores daytime temperature in the morning at pre-determined hours.

Adjustable indicator range, 56 to 84°F. Furnished with separate low voltage transformer.

Standard voltage and frequency, 115 volts, 60 cycles. 230 volts, 25, 50 and 60 cycles; 115 volts, 25 and 50 cycles, available at slight extra charge. Available with week-end shut-off, with week-end and adjustable holiday shut-off, with night shut-off or with night switch at slight additional cost. Available with locking device. Not available for d.c.

For mounting on standard wall switch box specify wall plate No. 23083 furnished at additional cost.

Overall dimensions, height, 8 inches; width, 3 inches; depth, 2⅝ inches. Silver finish.

No. T105A

Has Series 10 wiring; heat accelerated. Differential setting, 3°F. (adjustable). Heating element may be removed in the field.

No. T105A.....each **$39.00**

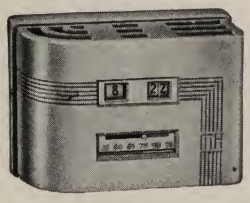
No. T205A

Has Series 20 wiring; heat leveling. Differential setting, 2°F. (adjustable). Heating element may be removed in the field.

No. T205A.....each **$39.00**

Minneapolis-Honeywell Chronotherms

Range, 56° to 84° F.



Automatically lowers the temperature at night and raises it in the morning.

Bi-metal actuated, the Chronotherm employs the feature of heat acceleration.

Has a direct-reading numeral-type clock driven by a self-starting Telechron motor.

Finger-tip adjustment of the temperature indicator on a scale co-ordinated with the thermometer reading. The position of the indicator may be changed manually. The Chronotherm always brings it back to established setting the next morning.

Requires no oiling and is easily installed on the wall mounting plate furnished. It has platinum-iridium contacts for long, trouble-free life.

Has Series 10 control circuit in which two contacts are made in sequence to start, and break in reverse sequence to stop. This circuit is particularly adaptable to relay operation. The thermostat and controller wiring is three-wire low voltage.

Height, 3⅝ inches; width, 5¼ inches; and depth, 2½ inches.

Has adjustable differential.

Silver finish, other finishes available at extra cost.

For low voltage a.c. only; 115 volts, 60 cycles.

Special voltages and frequencies at 230 volts, 25, 50 and 60 cycles; 115 volts, 25 and 50 cycles are available, add $2.00.

Shipping weight, 4 pounds.

Type T111A, with Heat Acceleration.....each **$26.00**
Type T211A, with Heat Leveling.....each **26.00**

Model T19A Minneapolis-Honeywell Twin Acratherms

This device combines two bi-metal open contact, low voltage, thermostats in one unit, operating independently of each other, and is used with a manual or automatic changeover switch for day-night control. Available in Series 10 to actuate M-H relays, valves, or motors. Compact and attractively designed.

Locking cover and locks for both dials are standard equipment.

Height, 4⅜ inches; width, 2¼ inches; depth, 1⅝ inches.

Low voltage A.C. only. Not applicable to D.C. Range: day, 55° to 85°F.; night, 50° to 74°F. Weight, ¾ pound. Silver finish.

When ordering, specify: (1) type number, (2) range, and (3) voltage and frequency of device Acratherm is to control.

Model T19A (Series 10).....each **$16.00**

WHEN ORDERING *please refer to the sizes and numbers shown in this book. It will help us in filling your order accurately.*

Minneapolis-Honeywell Da-Nite Acratherms

For Series 10 wiring, with or without heat acceleration. Heat acceleration improves heat distribution and eliminates over-shooting and under-shooting of room temperatures.

Scale range; day 55°F. to 85°F. and night 45°F. to 75°F. Adjustable differential for Type T108A, 1½°F. factory setting and for Type T109A, 3°F. factory setting.

Locking cover available at no extra charge; if both dials are to be locked, add $2.00.

Equipped with black setting wheel and winding knob. Silver finish. Ship. wt., 2 lb.

Type T108A.....each **$17.00**
*Type T109A, with Heat Acceleration.....each **17.00**

Minneapolis-Honeywell Da-Nite Thermostats

Designed for Series 20 wiring, with or without heat leveling.

Scale range; day 55°F. to 85°F. and night 45°F. to 75°F. Adjustable differential for Type T208A, 1°F. factory setting and for Type 209A, 1½°F. factory setting. Silver finish.

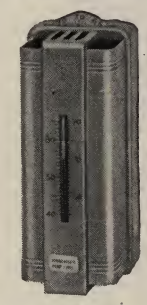
Locking cover available at no extra charge; if both dials are to be locked, add $2.00. Shipping weight, 2 pounds.

Type T208A.....each **$17.00**
*Type T209A, with Heat Leveling.....each **17.00**

*Specify type of controls being used, voltage and frequency when ordering.

Minneapolis-Honeywell Acratherms

A room thermostat that is available in Series 10, Series 20 and Series 80 to actuate relays, valves and motors employing these circuits. It is bi-metal actuated and employs platinum iridium open contacts.



Detachable wall plate provides for easy installation and wiring can be done without danger of short circuiting. Temperature dial and cover can be locked. Night shut-off available at no extra cost.

A visible scale and differential adjustment means are standard equipment.

Standard scale range is 55 to 85°F. Ranges 35 to 65°, 45 to 75° and 65 to 95°F. (or equivalents in Centigrade) available at extra cost. Not available for d.c.

Overall dimensions: height, 4⅜ inches; width, 1¾ inches; depth, 1⅞ inches.

Silver finish. Weight, ¾ pounds.

Special features available: Locking cover. Night cutoff. No extra cost.

When ordering, specify: (1) type number; (2) range; (3) type number, voltage, and frequency of device Acratherm is to control; and (4) special features required.

Type T11A, Heat Accelerated Series 10.....each **$8.00**
Type T21A, Heat Leveling Series 20.....each **8.00**
Type T81A, Heat Leveling Series 80.....each **8.00**

Type H63A Minneapolis-Honeywell Humidity Controllers

A snap acting controller actuated by human hair, the elongation or contraction of which operates a switching mechanism. Provides accuracy and as close control as possible.

Furnished with silver finish.

Restricted to temperatures less than 100°F. and to non-corrosive atmospheres.

Range, 20 to 96% relative humidity.

Differential 2% relative humidity.

Electrical rating, 1 ampere, 115 volts; ½ ampere, 230 volts.

Height, 5 in. Width, 2½ in. Depth, 2 in.

In ordering, specify type number and special features if required.

Type H63A, (Series 60).....each **$15.00**

Special finishes at extra cost.

Locking cover available at no extra cost.

Minneapolis-Honeywell Thermostats

Horizontal design, with self-enclosed non-magnetic switch. Can be locked by removing temperature setting knob. Positive on feature available.

Dimensions, inches; height, 2⅞; depth, 2³⁄₁₆; width including knob, 5. Weight, 1½ pounds.

Ranges, 45–75, 55–85°F. and Centigrade equivalent at no extra cost; 25–55, 35–65, 65–95, 75–105°F. and Centigrade equivalents available at extra cost.

Finish, silver screen on grey sub base; special finishes available at extra cost—submit sample.

No. TA42A

Makes contact on temperature fall (Series 40). Differential, non-adjustable 1°F. Electrical rating, 10 amperes at 115/230 volts, a.c., 1 hp. a.c. 115 volts; 1½ hp. a.c. 230 volts.
No. TA42A.....each **$9.00**

No. TA42B

Makes contact on temperature rise (Series 40). Differential, non-adjustable 1°F. Electrical rating, 10 amperes at 115/230 volts a.c., 1 hp. a.c. 115 volts; 1½ hp. a.c. 230 volts.
No. TA42B.....each **$9.00**

Minneapolis-Honeywell Pressuretrols

Mercury Switch Type

Provides high limit protection for steam and vapor systems. Has visible scale, external adjustment means for cut-in and cut-out pressures, and internal terminal connections. The actuating bellows are within the case.

The range of all P models and No. L604A is 0 to 15 pounds; differential adjustable 1 to 5 pounds, No. L604A adjustable 9 ounces to 6 pounds Various ranges are available for all L models; see footnote.

Cut-in pressure setting of Nos. L104A, P104A, L204A, P204A, L404A, P404A, and L604A plus the differential setting equals cut-out pressure. Cut-out pressure of Nos. L104B, P104B, L404B and P404B plus the differential setting equals cut-in pressure.

Electrical rating, Nos. L104A, P104A, L104B, P104B, L204A, and P204A, low voltage; Nos. L404A, P404A, L404B and P404B, 10 amperes 110 volts, 5 amperes 220 volts, 1 hp. a.c., ¼ hp. d.c.; No. L604A, 1 ampere 110 volts, ½ ampere 220 volts, ⅒ hp. a.c. and d.c.

Pipe tapping, ¼-inch pipe threads.

Height of case, 3⅞ in.; width, 3½ in.; depth, 2¾ in.

Shipping weight, P models 1½ pounds; L models 3 pounds.

No.	Description	Each
P104A L104A	Break Contact on Pressure Rise (Series 10)..	**$6.00** *
†P104B L104B	Break Contact on Pressure Drop (Series 10).	**6.00** *
P204A L204A	Stop Burner on Pressure Rise (Series 20)....	**6.00** *
P404A L404A	Break Contact on Pressure Rise (Series 40)..	**6.00** *
†P404B L404B	Break Contact on Pressure Drop (Series 40).	**6.00** *
L604A	Stops Burner on Pressure Rise (S.P.D.T. Switch).....	*

For knob for hand instead of screwdriver scale setting, add fifty cents.
*The prices of these numbers are determined by the range selected. For range of 0 to 15 pounds (L604A only) with differential adjustable ¾ to 6 pounds, $10.50; 2 to 50 pounds with differential adjustable 2 to 12 pounds, 5 to 150 pounds with differential adjustable 2–5 to 16 pounds, $9.50, (L604A $10.50); 10 to 300 pounds with differential adjustable 5 to 40 pounds, $13.50, (L604A $14.50). Kilogram equivalents are available at no extra cost.

Also used as unit heater controllers.

Minneapolis-Honeywell Pressure Controllers

A pressure actuated limiting device designed specifically for proportioning service.

Used in modulating systems for control of steam pressure, refrigerant pressure (except ammonia or other corrosive refrigerants), water or air pressure. For use with Series 90 motors, valves, or relays only.

Enclosed in a stamped steel housing and finished in black enamel. When ordering, specify type number.

Type L91A-Series 90, with Non-Adjustable Differential

Std. O.S. Nos.	Each	Scale Ranges	Scale Markings	Dif. Limits	Size In.	Potentiometer Resistance
†L91A1	**$14.00**	0–16 Oz.	0,4,8,12,16 Oz.	1 Oz.	7⁄64	135
†L91A14	**11.50**	0–15 Lb.	0,5,10,15 Lb.	½ Lb.	7⁄64	135
‡*L91A3	**14.00**	2–50 Lb.	0,10,20,30, 40,50 Lb.	2 Lb.	7⁄64	135
‡*L91A4	**14.00**	5–150 Lb.	0,25,50,75, 100,125,150 Lb.	5 Lb.	7⁄64	135
‡L91A9	**14.00**	22″ Vac., 35 Lb.	L,O,H	2 Lb.	7⁄64	135
‡L91A10	**15.50**	10–300 Lb.	10,100,200, 300 Lb.	10 Lb.	7⁄64	135

Type L91B-Series 90, with Adjustable Differential

†L91B1	**$16.00**	0–16 Oz.	0,4,8,12,16 Oz.	2–38 Oz.	¼	135
†L91B12	**13.50**	0–15 Lb.	0,5,10,15 Lb.	1–12 Lb.	¼	135
‡*L91B3	**16.00**	2–50 Lb.	0,10,20,30, 40,50 Lb.	4–32 Lb.	¼	135
‡*L91BX6	**16.00**	5–150 Lb.	0,25,50,75, 100,125,150 Lb.	5–23 Lb.	¼	135
‡L91B5	**16.00**	22″ Vac., 35 Lb.	L,O,H	5–32 Lb.	¼	135
‡L91BX11	**17.50**	10–300 Lb.	10,100,200, 300 Lb.	20–110 Lb.	¼	135

*These Instruments are semi-standard.
†Threaded pressure connection, ¼-inch male.
‡Threaded pressure connection, ¼-inch female.

Minneapolis-Honeywell Immersion Aquastats

Mercury Switch Type

For summer-winter hot water hook-ups or other usage where close control is necessary. Available for both horizontal and vertical mounting. Has external adjustment, visible scale, detachable well, internal wiring connections and snap-on cover. Thermostatic bi-metal actuation is employed.

Range, all numbers except No. L454A, 60 to 220°F. differential. L144 non-adjustable 5°F. Others, except L454, non-adjustable 10°F.; No. L454A, 80 to 220°F. with adjustable differential 12 to 40°F. Special Fahrenheit and all Centigrade ranges available for all numbers at extra cost.

Electrical rating, Nos. L144A, L144B and L244A, low voltage; Nos. L444A, L444B and L454A, 10 amperes 110 volts, 5 amperes 220 volts, 1 hp. a.c., ¼ hp. d.c.

Protecting well, all numbers except No. L454A, 2½-inch insertion length including ¾-inch pipe threads; No. L454A, 3¾-inch insertion length including ½-inch pipe threads. Available in special lengths at extra cost.

Height of case, 4⅜ in.; width, 3 in.; depth, 2⅛ in.

Shipping weight, 2 pounds.

No.	Description	Each
L144A	Breaks Contact on Temp. Rise (Series 10)..	**$7.00**
L144B	Makes Contact on Temp. Rise (Series 10)..	**7.00**
L244A	Stops Burner on Temp. Rise (Series 20)....	**7.00**
L444A	Breaks Contact on Temp. Rise (Series 40)..	**7.00**
L444B	Makes Contact on Temp. Rise (Series 40)..	**7.00**
L454A	Same as No. L444A, but for Vertical Mounting	**10.00**
L454B	Same as No. L444B, but for Vertical Mounting	**10.00**

Minneapolis-Honeywell Immersion Aquastats

Recommended for summer-winter hot water hook-ups or other usage where close control is necessary. Specially designed with proper terminals to use with the M-H Series 10 and 20 circuits. Available for both horizontal and vertical mounting. Has external adjustment, visible scale, detachable well, internal wiring connections, and snap-on cover. Thermostatic bi-metal actuation is employed.

Range Nos. L170A and L270A, 60–220°F. Available in Centigrade equivalents at extra cost. Differential is adjustable 10–20°F. Electrical rating, low voltage.

Protecting well, Nos. L170A and L270A, 2½-inch insertion length including ¾-inch pipe threads. Available in special lengths at extra cost.

Height of case, 4⅜ inches, width, 3 inches; depth, 2⅛ inches.

Shipping weight, 3 pounds.

No.	Description	Each
L170A	Breaks Contact on Temp. Rise (Series 10).	$7.00
L170B	Makes Contact on Temp. Rise (Series 10)..	11.00
L270A	Stops Burner on Temp. Rise (Series 20)....	7.00

Minneapolis-Honeywell Surface Aquastats

Mercury Switch Type

Designed for riser mounting and holds the temperature of hot water heating system within safe limits. Usable on pipes that are vertical, horizontal or set at an angle. Has visible scale, internal wiring connections and snap-on cover, and employs thermostatic bi-metal element.

Range, 100–200 degrees F. Available in Centigrade equivalents at extra cost. Differential is non-adjustable, approximately 10°F.

Electrical rating, Nos. LA109A and LA209A, low voltage; Nos. LA409A and LA409B, 10 amperes 115 volts, 5 amperes 230 volts, 1 hp. a.c., ¼ hp. d.c. Height of case, 4⅜ inches; width, 3 inches; depth 2½ inches.

Shipping weight, 1½ pounds.

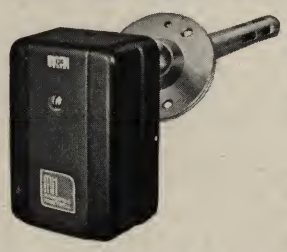
No.	Description	Each
LA109A	Breaks Contact on Temp. Rise (Series 10).	$6.00
LA209A	Stops Burner on Temp. Rise (Series 20)..	6.00
LA409A	Breaks Contact on Temp. Rise (Series 40).	6.00
*LA409B	Makes Contact on Temp. Rise (Series 40).	6.00

*Also used as unit heater controllers.

Minneapolis-Honeywell Furnacestats

No. LA412A Mercury Switch Type

Controls the operation of furnace fan and prevents circulation of cold air in the home. Has visible scale and internal wiring connections. Thermostatic bi-metal actuation is used. Range, 50 to 250°F. Available in Centigrade equivalent at extra cost. Adjustable differential approx. 15 to 65°F.



Electrical rating 10 amps. 110 volts, 5 amps. 220 volts, 1 hp. a.c., ¼ hp. d.c.

Furnished with swivel mounting bracket; element length, 10¼ (standard) to 24 inches maximum insertion. Furnished without swivel mounting bracket and with holes in back of case for surface mounting; element length, 5⅝ (standard) to 11 inches maximum insertion.

Height of case, 4⅜ in.; width, 3 in.; depth, 2⅛ in.

Shipping weight 2½ pounds.

No. LA412A, Makes Contaction Temp. Rise (Series 40).....each $6.50

Minneapolis-Honeywell Airstats

Provides high limit protection for warm air furnaces.

Keeps the temperature within safe limits. To set, turn external slotted screw. Has visible scale, internal wiring connections, snap-on cover. Thermostatic bi-metal actuation is employed. Fixed stops for 200 and 250°F. are available at no extra cost. Stops prevent operation beyond a predetermined maximum setting to conform to code requirements. Specify setting.

Range, 50 to 350°F. For Centigrade equivalent add $1.00.

Nos. LA119A, LA219A and LA419A have non-adjustable differentials, approximately 25°F. Nos. LA119B, LA219B and LA419B have adjustable differentials, approximately 18 to 100°F.

Electrical rating, Nos. LA119A, LA119B, LA219A and LA219B, low voltage; Nos. LA419A and LA419B, 10 amperes 110 volts, 5 amperes 220 volts, 1 hp. a.c., ¼ hp. d.c.

Furnished with swivel mounting bracket; element length, 10¼ (standard) to 24 inches maximum insertion. Furnished without swivel mounting bracket and with holes in back of case for surface mounting; element length, 5⅝ (standard) to 11 inches maximum insertion.

Height of case, 4⅜ in.; width, 3 in.; depth, 2⅛.

Shipping weight, 2½ pounds.

No.	Description	Each
LA119A	Breaks Contact on Temperature Rise, Non-Adjustable Differential (Series 10).....	$6.00
LA119B	Breaks Contact on Temperature Rise, Adjustable Differential (Series 10).....	6.50
LA219A	Stops Burner on Temperature Rise, Non-Adjustable Differential (Series 20).....	6.00
LA219B	Stops Burner on Temperature Rise, Adjustable Differential (Series 20).....	6.50
LA419A	Breaks Contact on Temperature Rise, Non-Adjustable Differential (Series 40).....	6.00
LA419B	Breaks Contact on Temperature Rise, Adjustable Differential (Series 40).....	6.50

Minneapolis-Honeywell Combination Furnace Controllers

Used to regulate furnace fan operation, either from bonnet temperature or in conjunction with the thermostat. All models equipped with manual fan switch. Element length 10¼ inches swivel mounting.

Fan differential adjustable 15° to 150°F. Limit control range: A types, 100° to 250°F.; B types, 100° to 200°F.

B types equipped with overrun switch; range, 120° to 250°F.

Electrical rating: Types LA101A, LA101B, LA201A, and LA201B limit switch: low voltage. Types LA401A and LA401B limit switch, LA101B, LA201B, and LA401B overrun switch and fan switch for all models: 1 hp. a.c. at 115 volts, 1½ hp. a.c. at 230 volts.

Height, 6⅛ inches; width 4⅜ inches; depth, including manual switch knob, 2⅞ inches.

When ordering, specify type number.

Type LA101A, Makes Series 40 Fan Contact, Breaks Series 10 Limit Control Contact on Temperature Rise.....each $11.00

Type LA101B, Type LA101A with Overrun Switch. Each..... 12.50

Type LA201A, Series 40 Fan Contact Makes and Series 20 Contacts Check the Fire on Temperature Rise.....each 11.00

Type LA201B, Type LA201A with Overrun Switch. Each..... 12.50

Type LA401A, Makes Series 40 Fan Contact, Breaks Series 40 Limit Control Contact on Temperature Rise.....each 11.50

Type LA401B, Type LA401A with Overrun Switch. Each..... 12.00

Minneapolis-Honeywell Damper Induction Motors

110 Volts, 50 or 60 Cycles, A.C.

A small, sturdy and efficient motor for application on domestic damper control and zone control installations. Constructed for long life, and when used for light duty damper service, will give trouble free service. It has two crank arms and a built-in switch for manual operation.

No. M26A

Available with Series 20 dual control switch, and brackets and linkages for zone control applications. May be mounted on either circular or flat duct surfaces.

When the motor circuit in the M87A model is interrupted or when power fails, a powerful spring drives the motor arm to the closed position.

No. M26A.—Damper motor, Series 20 two position, uni-directional.

No. M26C.—Same as No. M26A but has Series 20 dual switch suitable to control Series 10 or Series 20 equipment operating in tandem.

No. M87A.—Spring return damper motor, Series 80 (two-wire low voltage), closes damper on power failure.

Power consumption, 8 to 20 watts. Manual operation, basement switch standard.

Height, 5⅞ inches. Width, less motor arm, 4¼ inches. Depth, 5⅝ inches.

No.	M26A	M26C	M87A
Each	**$15.00**	**20.00**	**19.00**
Maximum Load.....in-lb.	18	18	20
Shipping Weight.....pounds	6¼	6¼	7

For other a.c. voltages and frequencies, add $2.00 extra.

External type transformer supplied. Power type plate mounted standard; limited output type with plate or foot mounting available at no extra cost.

Minneapolis-Honeywell Solenoid Magnetic Gas Valves

Screwed

Nos. V44 and V84

Two-wire type, silent in operation. Manual opening or closing during power failure is available. This feature allows only two positions fully open or closed. Valves are straight through type, non-offset.

Nos. V435 and V835

Nos. V44 and V84 have cast iron body with brass seat insert.

Nos. V435 and V835 have cast brass body.

Power type transformer. Power consumption 8 to 12 watts.

Pressure rating ¼-pound per square inch. Pilot tapping ¼-inch. Standard voltage—110 volt, 50 or 60 cycle. Other a.c. voltages add $2.00. Nos. V44 and V435 available for d.c. add $2.00.

Regular

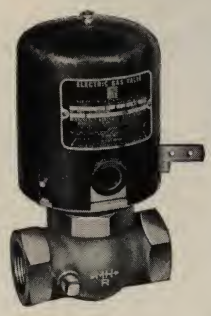
Size Inches	Cap Cu. Ft. Per Hr.	Series 40 No. V44A Each	Series 40 No. V435A Each	Series 80 No. V84A Each	Series 80 No. V835A Each
⅜	150	.....	**$6.50**	.....	**$7.00**
½	210	.....	**6.50**	.....	**7.00**
¾	295	.....	**7.00**	.....	**7.50**
1	430	**$9.00**	....	**$9.50**	....
1¼	700	**11.50**	....	**12.00**	....

With Manual Opening Feature

Size Inches	Cap. Cu. Ft. Per Hr.	Series 40 No. V44B Each	Series 40 No. V435B Each	Series 80 No. V84C Each	Series 80 No. V835D Each
½	210	.....	**$6.50**	.....	**$7.00**
¾	295	.....	**7.00**	.....	**7.50**
1	430	**$9.00**	....	**$9.50**	....
1¼	700	**11.50**	....	**12.00**	....

Minneapolis-Honeywell Motorized Gas Valves

Screwed Ends



For the control of gas burning equipment in boilers and furnaces for both domestic and small industrial applications.

Series 10 incorporates a locking screw in the secondary air arm, which when left in, permits opening valve manually when arm is depressed. When manually opened during a power failure period, valve recycles as soon as power is restored. With locking screw removed valve cannot be opened by manually depressing damper arm. This last arrangement is adaptable to forced warm air installations. Series 10 low voltage motor is of two-coil type utilizing both coils on opening of valve but holding open on only one coil.

Series 10 is available with a mercury switch for controlling auxiliary loads.

Series 40 is for use with line voltage controls or on tandem installations where more than one valve is required.

Series 10 and 40 are not to be recommended for final shutoff service when valve must remain energized continuously. Series 10 and 40, the latter which is two-wire line voltage, are available with either reverse acting (standard) or direct acting secondary air damper arm.

Nos. V155A or V415A. Damper arm lowers when valve opens.

No. V155C. Mercury switch closes external load circuit and damper arm lowers when valve opens.

Pattern. Straight through, non-offset.

Transformer. Leakage type.

Pressure Rating. ¼-pound per square inch except 8-ounce for propane and butane.

Timing. Opening, 5 seconds; closing 2 to 3 seconds.

Pilot Tapping. ¼ inch.

Auxiliary Damper Arm. Nos. V155A, V155C, and V415A extends 3½ inches from vertical center line. Unbalanced load, 1 pound.

Manual Opening. Provided in Nos. V155A, and V155C. By removal of locking screw, valve seat cannot be opened manually.

External Load Circuit. No. V155C: 10 amperes, 110 volts; 5 amperes, 220 volts; ¾ hp., repulsion induction; ¼ hp., single phase, d.c.

Power Consumption. Series 10: 15 watts opening; 8 watts holding; standby, approximately 2 watts. Series 40: 8 watts.

Voltage and Frequency. Available for a.c. only; 110 volts 50 or 60 cycle.

When ordering, specify type No., size, voltage and frequency, and type of gas (if for propane or butane).

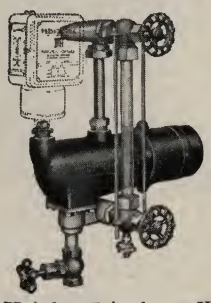
Size In.	Series 10 No. V155A Each	Series 10 No. V155C Each	Series 40 No. V415A Each	Cap. Cubic Feet	Ship. Wt. Lb.
¾	**$24.00**	**$27.50**	**$21.50**	400	11½
1	**24.00**	**27.50**	**21.50**	550	12
1¼	**27.00**	**30.50**	**24.50**	850	13½
1½	**31.50**	**35.00**	**29.00**	1100	14¾
2	**34.00**	**37.50**	**31.50**	1550	17¼
2½	**41.00**	**44.50**	**38.50**	2250	23¼

For propane or butane gas in ¾, 1, 1¼, 1½, and 2-inch sizes, add $2.00 extra.

For other available a.c. voltages and frequencies, add $2.00 extra.

Minneapolis-Honeywell Low Water Cutoffs

Gauge Glass Types



For domestic use. Easily installed. Supplied complete with quick hookup fittings and length of copper tubing which permits mounting in gauge glasses. An opening is provided to accommodate Pressuretrol, facilitating wiring. Blow-off cock is standard.

Electrical rating: 10 amp. 110 volts, 5 amp. 220 volts, ¾ hp., R. I.; ¼ hp., S.P. and D.C. C602A alarm contacts 1 amp. 110 volts, ½ amp. 220 volts.

Tapping, ½ inch pipe threads. Height, 5 inches. Width, 3⅛ inches. Depth, 10½ inches.

Prices do not include the Pressuretrol or Vaporstat.

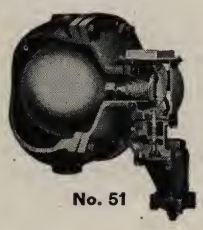
In ordering specify type number, center to center gauge glass mounting holes if longer than 12 inches, and special features if required.

Type C402A, Series 40, Ship. Wt., 10 Lb.....each **$17.00**
Type C602A, Series 60, Ship. Wt., 10 Lb.....each **18.50**

Extra length tubing, at $2.00 if distance between centers of gauge glass mounting holes is longer than 12 inches. Order part No. 32239A separately.

McDonnell Safety Feeders

No. 51



No. 51

For hand fired boilers above 5000 square feet capacity. Maximum steam pressure, 35 pounds.

Built for installation with 1-inch equalizing pipe hook-up and is provided with a large valve to give it added capacity for larger boilers.

Feed water piping, ¾-inch. Equalizing pipes, 1-inch.

Shipping weight, 43 pounds.

No. **51**.....each **$52.00**

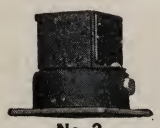
No. 53

For hand fired boilers of any size where steam pressure ranges from 35 to 75 pounds. Has the same features of design as No. 51 except that it is provided with double-ply sylphons and an extra heavy float to withstand steam pressures up to 75 pounds. Water pressure must exceed steam pressure by 10 pounds or more. Feed water piping, ¾-inch. Equalizing pipes, 1-inch.

Shipping weight, 44 pounds.

No. **53**.....each **$59.00**

No. 2 McDonnell Low Water Cut-Off Switches



No. 2

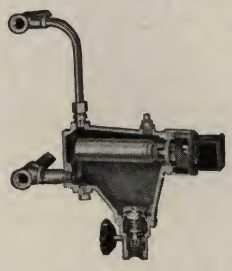
Used on Nos. 47, 147, 51 and 53 Safety Feeders. Has high voltage cut-off contacts and low voltage alarm contacts for quick and easy application to feeders, adding low water cut-off protection to the convenience of automatic water supply. Furnished separately or mounted. Weight, 2 pounds.

No. **2**, Switch Only.....each **$6.50**

We are as near as your nearest telephone.

No. 67 McDonnell Low Water Cut-Offs

25 Pounds Maximum Steam Pressure
¾ H.P. 115-220 Volts A.C.—10 Amps. 125 V., D.C.
Underwriters' Laboratories Approved

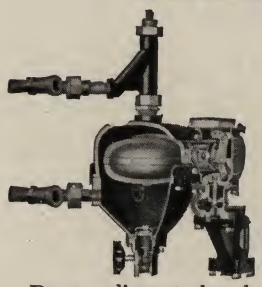


For boilers of any size. Deep sediment chamber with flanged opening; packless, non-binding construction; advanced double Rollmagswitch; adjustable terminal box so that BX can be brought in from top, bottom or either side. Double switch is furnished. One switch closes on small drop to operate low water alarm or to operate No. 101 electric water valve. The other operates on a greater drop as low water cut-off. Body has self-closing blow-off valve tapped ¾ inch.

No. **67**, Shipping Weight, 13 Pounds.....each **$18.50**

No. 47 McDonnell Quick-Hook-Up Safety Feeders

Maximum Steam Pressure 25 Pounds



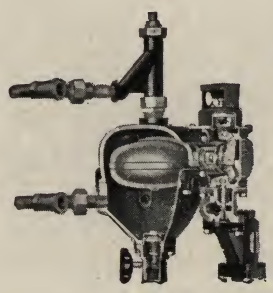
For hand fired boilers up to 5000 square feet capacity.

Has a patented isolated feed valve (cool feed valve). It also has the quick-hook-up feature which cuts installation time and accurately reproduces the true boiler water level in the float chamber. Other features are stainless steel valves, double syphon construction, straight thrust valve action, and large integral strainer.

Deep sediment chamber and special spring closing blow-valve. Feed water piping ½-inch.

No. **47**, Shipping Weight, 30 Pounds.....each **$36.00**

No. 47-2 McDonnell Combined Safety Feeders and Cut-Offs



For boilers up to 5000 square feet capacity. Maximum steam pressure, 25 pounds.

No. 47 safety feeder with No. 2 low water cut-off switch mounted in place.

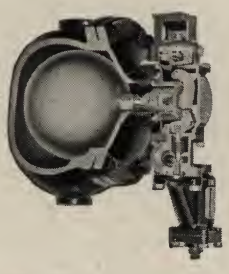
For automatic jobs where completely automatic operation is desired.

Shipping weight, 31 pounds.

No. **47-2**.....each **$42.50**

No. 51-2 McDonnell Combined Boiler Water Feeders and Low Water Cut-Offs

Maximum Steam Pressure, 35 Pounds
Maximum Water Pressure, 150 Pounds



For large automatically fired boilers, rated above 5,000 square feet capacity.

Has straight thrust cam-and-roller valve action. Large area built-in strainer.

Body tappings 1 inch for 1 inch equalizing pipes. Feed water piping ¾ inch.

Shipping weight, 43 pounds.

No. **51-2**.....each **$58.50**

No. 800 Arco Water Regulators

Immersion type; for house heating systems. Will control combustion to maintain steadily a boiler water temperature of any degree between 100 and 220°F.

Made entirely of metal and is durable, accurate and dependable.

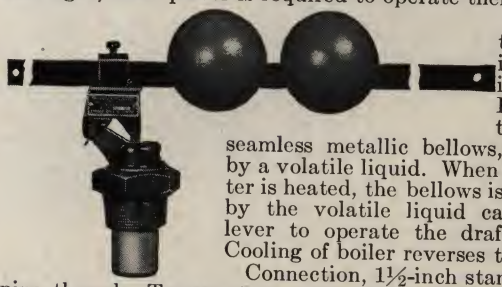
Length of bulb, 2¾ inches. Standard pipe thread connection, 2 inches. Trimmings: one 37-inch lever, two 4-pound weights, 12 feet of chain, two ceiling pulleys, and four S hooks.

Shipping weight, 15 pounds.

No. **800**.....each **$18.00**

No. 801 Arco Junior Water Regulators

For hot water supply boilers. As the dampers are small and light, little power is required to operate them.

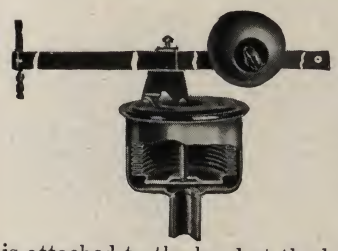


Regulator bulb is immersed in boiler. Bulb contains a seamless metallic bellows, actuated by a volatile liquid. When boiler water is heated, the bellows is expanded by the volatile liquid causing the lever to operate the draft control. Cooling of boiler reverses the action.

Connection, 1½-inch standard iron pipe thread. Temperature range, 100° to 220°F. Length bulb, 1⅞ inches. Trimmings include 30-inch lever, two 3-pound weights, 6-foot chain, and two S-hooks.

No. **801**, with Trimmings; Ship. wt., 14 Lb.....each **$14.00**

No. 905 Arco Steam Regulators



An all-metal pressure regulator for controlling dampers on steam-heating boilers. Sensitive and accurate. Diaphragm is a metallic bellows. The steam pressure is on the outside of the bellows, with the stem or thrust rod extending down within the bellows where it is attached to the head at the bottom.

For pressures up to 15 lbs. Connection, 1-in. male thread.

Trimmings furnished are 37-inch lever, 4-pound weight, 12-foot chain, 2 ceiling pulleys and 4 S-hooks.

Shipping weight, 16 pounds.

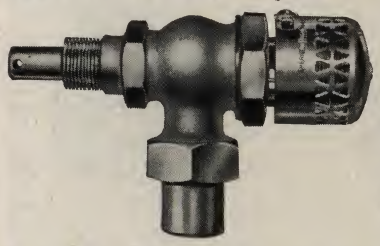
No. **905**.....each **$16.00**

No. 240 Arco Radiatherms

Automatic Radiator Controls

Range: 40° to 85°F.

A combination thermostat and radiator valve for 2-pipe steam, vapor, or vacuum systems. Close-coupled; for cast iron radiation without enclosures.



Automatically regulates the amount of steam or vapor admitted to radiator to maintain room temperature at a definite point. Each room equipped with radiatherm is kept at whatever temperature may be desired, independent of other rooms in the building.

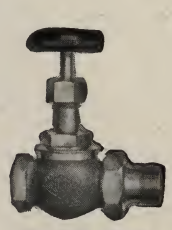
Available in sizes ½, ¾, 1, 1¼ and 1½ inches.

Complete information and prices furnished on request.

Jenkins Radiator Valves

Fitted with No. 110-H Disc

With Male or Female Union, Composition Wheel



No. 167, Globe

No. 168, Angle

High tensile bronze body, liberally proportioned. Union ring facilitates installation.

Regularly furnished with composition wheels, but can be fitted with bronze or wire wheels or with lock shield at slight additional charge.

Size In.	Rough Body Finished Trimmings Each	Finished All Over Each	Rough Body, N.P. Trimmings Each	Rough Body, N.P. All Over Each	Finished and N.P. All Over Each
¼	$4.90	$5.70	$5.50	$5.70	$6.50
⅜	4.90	5.70	5.50	5.70	6.50
½	5.20	6.00	5.80	6.00	6.80
¾	6.60	7.50	7.20	7.40	8.30
1	8.00	9.00	8.70	9.00	10.00
1¼	11.00	12.00	11.60	11.80	13.00
1½	14.60	16.50	15.00	15.40	17.00
2	24.00	26.00	24.50	25.00	27.00

Jenkins Low Bonnet Radiator Valves

With Male or Female Union

No. 853, Angle **No. 852, Globe**

This type of valve is preferred by many because of its compact design and close dimensions.

The manganese bronze spindle has double threads so that valve can be opened with approximately one turn of the hand wheel. It is fitted with the follower type of stuffing box.

With black composition handwheels; also with bronze handwheels when required or with lock shield and key. Finished all over with union outlet; other finishes on order.

Size.....inches	½	¾	1	1¼	1½	2
Each.....	$6.00	7.50	9.00	12.00	16.50	26.00

DL Circulator Radiator Valves

A packed valve that opens smoothly and easily. Valve inlet has a sweat connection for copper pipe, together with threaded male union for radiator connection.

No. 216, Angle

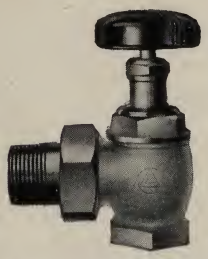
The flat, vane end of valve stem fits tightly in the body, in contact with sides of wall, and as handle is turned scrapes away any dirt of scale.

Has visible stop for off or on position.

Furnished in two types, angle or straight.

Sweat Connection.....inches	⅜	½	¾	1
Male Union.....inches	½	½	¾	1
No. **216**, Angle.....each	..	..	..	..
No. **217**, Straight.....each	..	..	..	..

No. 999 Arco Packless Radiator Valves



For steam, vapor and vacuum heating. Never leaks, never needs repacking, cannot stick, and opens with one turn of the ever-cool handle.

Heavy non-rusting spring keeps constant pressure on special leakproof rings.

Special molded rings with metal core held under compression by heavy spring maintain a tight seal around the stem.

Sturdy thread screw of large diameter insures easy, smooth operation and tight seating.

Satin nickel finish, polished trimmings. All threads right hand. With union. Composition disc of high quality.

Size.....inches	½	¾	1	1¼	1½
No. 999, Angle Type...each	$3.70	4.30	5.10	6.40	8.40

No. 900 Arco Adjustable Orifice Packless Radiator Angle Valves

A bronze valve for 2-pipe systems.

Has an internal calibrated orifice which can be adjusted to the precise opening that each radiator requires to balance the system. Permanent adjustment, not affected by turning valve handle, can be made from either side of valve while steam is on.

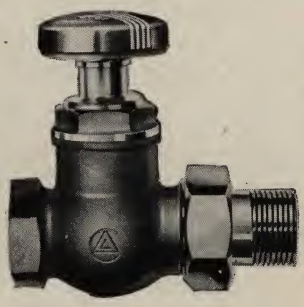
Capacity, 5 to 100 square feet.

Has composition disc, union coupling, and right-hand threads.

Available only in ¾-inch size.

No. 900.....each .....

No. 949 Arco Packless Radiator Globe Valves



For steam. Is permanently tight against passage of water, steam, or even air.

Is leakproof, having special molded rings with metal core held under compression by spring.

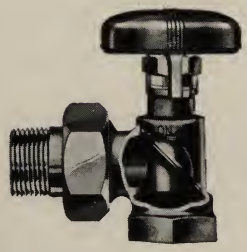
Has union coupling. Composition disc.

Non-breakable composition handle will not work loose.

Bronze valve, in satin nickel finish with polished trim.

Size.....inches	½	¾	1	1¼	1½
No. 949.....each	$3.70	4.30	5.10	6.40	8.40

No. 901 Arco Quick Opening Packless Hot Water Valves



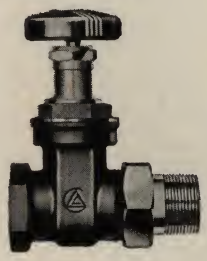
Swinging plate cuts away corrosion and deposit, keeps inside of valve clean, prevents sticking, and its concave shape reduces friction. Non-leaking packless construction. An adjustable stop for equalizing water flow, making it possible to adjust the area of opening after installation. This is done by loosening the stem cap and turning stop so that valve can be opened only to desired point, thus increasing or decreasing the circulation to any radiator and balancing the system.

Round handle. With union. All threads are right hand.

Satin nickel finish. Polished trimmings.

Size.....inches	½	¾	1	1¼	1½
No. 901 Round Handle...ea.	$3.25	3.70	4.50	5.75	7.30

No. 993 Arco Packless Radiator Gate Valves



For steam.

Employs the packless principle of molded rings under spring compression. This feature prevents leaks and eliminates repacking.

With union. Round handle.

All threads right hand.

In satin nickel finish with polished trimmings.

Size.....inches	½	¾	1	1¼	1½
No. 993.....each	$3.65	4.25	5.20	6.60	9.00

No. 375 Ideal Convector Gate Valves

For Steam and Hot Water

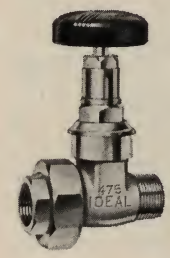
Designed especially for convector type radiator installations.

The male thread is screwed directly into convector before convector is placed in recess. Tail piece which is provided with a hex on the outside and a female thread on the inside is screwed onto stub. When convector is placed in position it is only necessary to tighten tail nut. No short nipples or unions are needed.

Rough brass finish with black, non-heating handle.

Size.....inches	½	¾	1	1¼
No. 375.....each	$3.65	$4.25	$5.20	$6.60

No. 475 Arco Ideal Packless Convector Gate Valves



A compact straightway valve to fit the restricted space ordinarily available between convector radiator and floor.

Quality construction throughout. Special leakproof feature.

Screw outside iron pipe thread directly into convector before setting in position; the tail piece is screwed on to the riser stub.

When convector is placed in position, it is only necessary to tighten tail nut.

Satin nickel finish.

Size.....inches	½	¾	1	1¼
No. 475.....each	$3.65	4.25	5.20	6.60

DL Radiator Steam Valves

Packed Type, with Union and Composition Disc

No. 57, Globe

No. 72, Angle

Has non-breakable, non-heat conducting round handle, permanent black hard-rubber finish. Satin finish body, nickel trimmings. All right-hand threads.

Size.....inches	½	¾	1	1¼	1½	2
No. 57, Globe...each	$3.70	$4.30	$5.10	$6.40	$8.40	.....
No. 72, Angle....each	1.45	1.65	2.00	2.50	3.20	$5.00

Nos. 32 and 37 DL Radiator Valves

For Steam, with Union and Composition Disc

No. 32, R.H. Corner

Equipped with a new kind of non-breakable, non-heat conducting round handle, with a permanent black hard-rubber finish. Body is in satin finish with nickel trimmings. All threads right hand.

No. 37, L.H. Corner

Size.....in.	½	¾	1	1¼	1½
R. H. Corner.....each	$4.10	$4.75	$5.60	$7.05	$9.25
L. H. Corner.....each	4.10	4.75	5.60	7.05	9.25

DL Radiator Valves

Quick-opening
For Hot Water
Angle Pattern—With Union

Has an elliptical plate set at a 45-degree angle attached to stem. By revolving stem half turn to left valve is opened; half turn to right closes it.

Size Inches	No. 101 Round Handle Each	Size Inches	No. 101 Round Handle Each
½	$1.10	1¼	$2.10
¾	1.30	1½	2.75
1	1.65	...	....

No. 102-A Circulator Packed Valves

Especially developed for hot water systems equipped with circulators.

The No. 102 employs the famous patented swinging plate which prevents hard turning or sticking and provides minimum flow friction when the valve is open. It uses the gland type of stuffing box and is easily adjusted to prevent leakage. Equipped with an indicator and non-heating durable handles.

Regularly supplied with standard male unions for radiator connection and standard pipe thread at bottom. All threads are right hand.

Satin nickel finish; polished trimmings.

Size.....inches	½	¾
No. 102-A.....each	....	....

No. 132 DL Brass Union Radiator Elbows

Made of cast brass, satin nickel finished, with polished trimmings.

All threads are right hand.

Size..in.	½	¾	1	1¼	1½
Each....	$.60	.75	1.00	1.30	1.75

Pipe Cutting & Threading

We are prepared to cut and thread pipe to measurement or sketch.

No. 232 DL Standard Union Elbows

With Sweat Connection for Copper Pipe

When it is desired to use ordinary union elbows with copper pipe, the Genuine Detroit Standard Union Elbow is available with sweat connections at the bottom. Saves cost of adaptor, cost of making extra joint, and presents a better appearance.

Satin nickel finish. Polished trimmings.

Size.....in.	¾	½	⅜
No. 232.....each	....	....	....
Threaded Union.....in.	¾	½	½
Nominal Copper Pipe Connection...in.	¾	½	⅜

DL Balancing Union Elbows

For Use with Hot Water Circulators

No. 233

Makes it possible to provide the correct flow to each radiator after installation. The adjustable baffle can be set after the job is in operation without draining the system, and provides an almost infinite number of settings. Satin nickel finish. Polished trimmings.

Regularly supplied with standard outside I.P.T. unions for radiator connection and either standard inside I.P.T. or sweat connection at the bottom. Where copper pipe is used, the use of the sweat connections brings a saving because the cost of the elbow is less than the cost of a threaded elbow plus the adaptor for copper pipe. It also saves the extra joint together with the cost of making it up and presents a neater connection.

No. 233, with Inside Sweat Connection at Bottom

Size.....in.	1	¾	½	⅜
No. 233.....each	....	....	....	....
Threaded Union.....in.	1	¾	½	½
Nominal Copper Pipe Conn....in.	1	¾	½	⅜

No. 133, with Hex and Inside Iron Pipe Thread at Bottom

Size.....in.	1	¾	½	⅜
No. 133.....each	....	....	....	....
Threaded Union.....in.	1	¾	½	½
Inside Iron Pipe Thread.....in.	1	¾	½	⅜

DL Balancing Straight-Way Fittings

For Use on Hot Water Systems

No. 234

Especially for use on the return connection of Convector radiators. The adjustable baffle can be set after the job is in operation without draining the system, and provides an almost infinite number of settings. Satin nickel finish. Polished trimmings.

Regularly supplied with standard outside I.P.T. unions for radiator connection and either standard inside I.P.T. or sweat connection at the bottom.

No. 234, with Inside Sweat Connection and Outside Iron Pipe Thread Union

Size.....in.	1	¾	½	⅜
No. 234.....each	....	....	....	....
Threaded Union.....in.	1	¾	½	½
Nominal Copper Pipe Conn....in.	1	¾	½	⅜

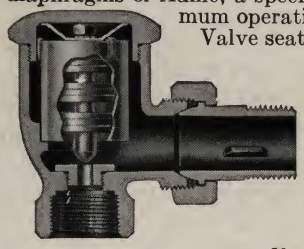
No. 134, with Hex End Threaded Inside and Outside Iron Pipe Thread Union

Size.....in.	1	¾	½	⅜
No. 134.....each	....	....	....	....
Threaded Union.....in.	1	¾	½	½
Inside Iron Pipe Thread.....in.	1	¾	½	⅜

Hoffman Thermostatic Traps

Bronze Type

All bronze body and cap. Thermostat composed of six diaphragms of Adnic, a special non-corrosive alloy. Maximum operating pressure, 125 pounds. Valve seats are renewable.



No. 8H

Connections, ½x½ inch, in angle, right-hand, left-hand and straightway patterns. Also in ⅜x⅜-inch angle pattern. With unions. Capacities furnished on application.

No. 8H.....each **$6.25**

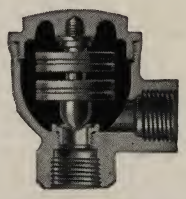
No. 9H

Connections, ¾x¾ inch or 1x1 inch, angle only. With unions. Capacities furnished on application.

No. 9H.....each **$7.50**

No. 17-D Hoffman Thermostatic Traps

Iron Body

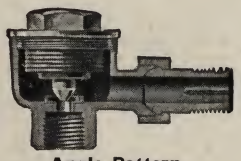


Body and cap are of fine quality gray cast iron. Thermal element consists of four non-corrosive diaphragms. Special alloy pin, and the entire thermal assembly can be renewed. Connections, ½x½ inch, with left-hand thread on inlet. Operating pressure, 15 pounds.

No. 17-D; Capacity, 200 Sq. Ft. E.D.R.....each **$3.40**

Hoffman Bellows Type Thermostatic Traps

Vertical Pattern



Angle Pattern

The thermostat is of the bellows type and is hydraulically formed and tested. Nickel silver valve pin and bronze renewable seat. Has ½-inch connections. Nominal capacity, 200 square feet of direct radiation. The No. 17V is similar in operation and capacity but is of the vertical type for use on concealed radiation.

Port, ⅜ inch. Maximum guaranteed operating pressure, 15 pounds. Bellows, 1½ inches in diameter, 6 convolutions.

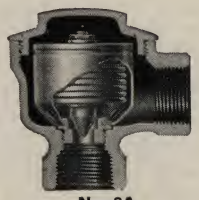
No. 17A, Angle Pattern, ½x½ or ½x¾-Inch.....each **$4.00**
No. 17A, Swivel Pattern, ½x½ Inch.....each **4.00**
No. 17A, Angle Pattern, ¾x¾ Inch.....each **4.25**
No. 17V, Vertical Pattern, ½x½ Inch.....each **4.00**

Good Will and Customers

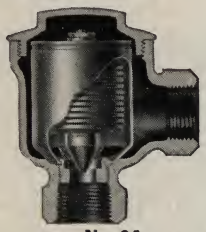
Sincerely we hope to make each transaction with you a further bond of good will between us.

Hoffman Thermostatic Traps

Iron Body—Bellows Type



No. 8A



No. 9A

Body and cap are of fine quality gray cast iron. Cage, bellows and seat combined into a single unit screwed into the body, and the joint sealed with a soft copper gasket.

Thermal unit is renewable and interchangeable. Thermal member made from seamless drawn shells and formed by a hydraulic method assuring uniform metal thickness and crystalline structure.

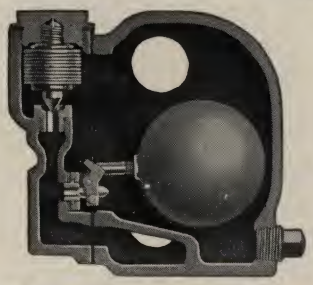
Valve pin and seat are of special alloy.

Connections, ¾x¾ inches, with left-hand female thread on inlet, and right-hand female thread on outlet.

Maximum operating pressure, 25 pounds.

No. 8A, Capacity, 400 Sq. Ft. E.D.R.....each **$4.50**
No. 9A, Capacity, 700 Sq. Ft. E.D.R.....each **6.15**

Series 50 Hoffman Float and Thermostatic Traps



Of the continuous flow float type with internal thermostatic air by-pass and built for operating pressures up to 15 pounds differential. The trap is made in three body sizes with a large range in capacities. The trap has a parabolic valve which will not become wire drawn. Both the valve and valve seat are of a non-corrosive, stainless alloy steel and both are reversible. The float valve and seat is water sealed and therefore prevents the loss of steam through this outlet. Mechanism made of high grade non-corrosive materials.

Entire working mechanism is mounted on the cover, which may be removed as all piping connections are on the body.

These mechanical type traps are available with or without thermostatic air by-pass for pressures up to 125 pounds.

Float and Thermostatic No.	Each	*Mechanical No.	Each	†Conn. Sizes Inches	Ship. Weight Pounds
53-T	$12.10	53	$10.50	¾	7⅛
54-T	15.00	54	13.40	¾ or 1	7⅛
55-T	18.40	55	15.75	1, 1¼ or 1½	12⅝
56-T	36.75	56	26.25	1, 1¼ or 1½	12⅝
57-T	47.25	57	36.25	1¼ or 1½	37¾
58-T	52.50	58	42.00	1½	37¾

Capacities in Pounds of Water per Hour

Float and Thermostatic No.	*Mechanical No.	Pressure Differentials in Lbs. per Sq. In. ½	1	2	3	5	8	10	15
53-T	53	190	255	330	390	525	625	700	875
54-T	54	705	915	1200	1390	1800	2180	2420	3100
55-T	55	905	1140	1490	1750	2440	2820	3140	3820
56-T	56	1370	1760	2400	2720	3460	4300	4950	6100
57-T	57	4050	4625	6050	7100	8750	10900	12100	14600
58-T	58	5300	6200	8000	9300	11000	13000	14500	17000

*Without internal thermostatic air by-pass.

†Traps will be tapped for pipe sizes as shown (not bushed). When ordering give type and number of trap and tapping required.

NOTE.—In estimating pressure differentials on vacuum pump installations, consider each 2 inches of vacuum equals 1 pound pressure. For example, if steam pressure is 2 pounds and the vacuum in system is 6 inches, the differential is 5 pounds.

Sarco Thermostatic Steam Traps

Liquid Expansion Type—No. 87, 50-200 Lbs.—No. 870, 50-350 Lbs.

Recommended for high pressure heating coils for buildings or in process work, where steam pressures are reasonably constant. Valuable where condensation cannot be returned to the boiler.

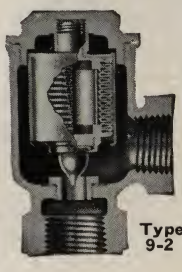
Size In.	No. 87 Each	No. 870 Each	Capacity Condensate, Lbs. per Hour — Pressure, Lbs. 50	100	150	200	250	300	350
½	$9.00	$10.50	540	800	1000	1140	1260	1320	1470
¾	11.00	12.50	700	1000	1210	1400	1560	1690	1820
1	16.00	19.50	920	1300	1600	1840	2050	2220	2380
1¼	25.00	30.00	1280	1820	2200	2550	2820	3060	3260
*1½	43.00	49.50	2420	3450	4180	4750	5380	5820	6250
*2	50.00	57.00	3600	5120	6200	7200	8000	8700	9300

*Made with flanged inlet only.

No. 9 Sarco Factory Adjusted Steam Traps

A self-adjusting balanced-pressure type trap. Recommended for steam coils or jackets in all types of process equipment, also for factory heating coils and to drain steam lines.

Type 9–1 has brass composition valve head and seat; Types 9–2 and 9–200 have stainless steel valve head and seat.

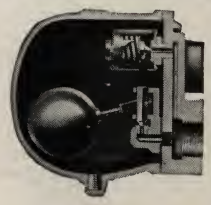


Type 9-2

Size In.	Type 9-1 0 to 50 Lb. Each	Lb. Water per Hr. at 50 Lb.	Type 9-2 0 to 125 Lb. Each	Lb. Water per Hr. at 125 Lb.	Type 9-200 50 to 200 Lb. Each	Lb. Water per Hr. at 200 Lb.
½	$7.50	1000	$8.50	1800	$9.50	2380
¾	10.50	1500	11.50	2400	12.50	3020
1	13.50	2200	14.50	3200	15.50	4150
1¼	20.00	4400	29.00	6400	29.00	8300
1½	24.00	6600	33.00	9600	33.00	12450
2	28.00	8800	39.00	12800	39.00	16600

Sarco Combination Float and Thermostatic Steam Traps

A heavy duty float trap which will not air-bind. Recommended for line drips, unit heaters, etc. Can be hung from piping without any other support.



Cast iron body, copper float, bronze valve mechanism. Series FTL has bronze seats and discs. Series FTM and FTH have stainless steel seats and discs.

All working parts completely accessible for inspection and cleaning without disturbing pipe connections. Remove body only, as all parts are attached to front cover.

Series FTL
0 to 15 Pounds Pressure

No.	Each	Inlet and Outlet Connections Inches	Cap., Lb. Condensate per Hour at 10 Lb.	Ship. Weight Pounds
FTL-00	$14.35	¾	1020	9½
FTL-0	17.80	¾ or 1	3350	10
FTL-1	21.85	1¼ or 1½	6100	15
FTL-2	27.00	1¼ or 1½	10800	15½
FTL-3	45.00	1½	18000	25
FTL-4	55.00	2	26800	35½

Series FTM
60 to 125 Pounds Pressure

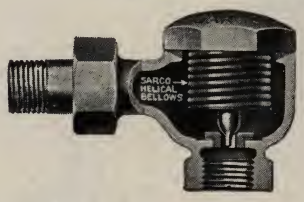
*FTM-00	$16.00	¾	†850	9½
FTM-0	18.50	¾ or 1	†1870	10
FTM-1	24.00	1¼ or 1½	†3270	15
FTM-2	30.00	1¼ or 1½	†5630	16
FTM-3	48.00	1½	†8400	25½
FTM-4	62.00	2	†12200	36

Series FTH
50 to 200 Pounds Pressure

FTH-1	$30.00	¾ or 1	‡1750	15½
FTH-2	45.00	1¼ or 1½	‡5600	31½
FTH-3	70.00	2	‡8270	51

*Maximum pressure, 65 pounds. †Condensate at 60 pounds. ‡Condensate at 150 pounds.

Type H Sarco Radiator Traps



For vapor, vacuum and low pressure heating systems up to 15 pounds. Uses bellows made from helically corrugated, seamless flexible bronze tubing. Renewable hard bronze seat.

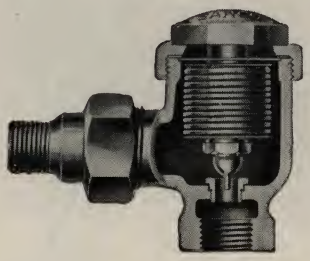
Body and cap are of cast bronze, nickel finished with polished trimmings; union nut and tail piece are extra heavy. Motor element is fastened rigidly to cap. Large diameter tubing and sensitively proportioned operating fluid contained in motor element insure a positive closing pressure.

Available in angle, offset and straightway patterns.

Size.....inches	*½	¾	1
Type H.....each	$5.00	6.60	11.90

*Can be furnished with ½-inch inlet and ¾-inch outlet at same price.

Type E Sarco Radiator Traps



For vacuum, vapor and low pressure steam heating systems. Uses a helically corrugated bellows of large diameter, containing a volatile liquid.

The life of the expansion element is greater than that of flat diaphragm discs or annularly corrugated bellows, due to the spiral corrugations distributing the valve movement over the whole tube.

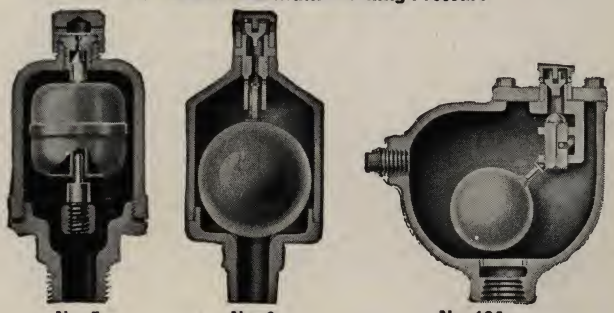
Trap will work on any degree of vacuum and on any steam pressure up to 25 pounds.

Made in angle, left, right and straightway patterns.

Inlet and Outlet.....inches	½	¾	1
Type E.....each	$5.95	8.60	13.50

Sarco Air Eliminators

For Low Pressure Vapor Heating Systems
15 Pounds Maximum Working Pressure



No. 5 No. 6 No. 12A

For venting air from radiators and piping at one central point in basement. Rapid and complete removal of all air.

A copper float in a cast iron float chamber controls the outlet valve, which is normally open.

As steam pressure is generated, air is blown out against a very light check valve, which prevents the air returning when a vacuum develops. Should water reach the float chamber, the float will lift, closing the discharge so that no water can spill.

For one-pipe steam heating systems and for special applications where steam may be present in the vent line, type T is provided. In addition to the float, it is equipped with a thermostatic bellows which expands when heated, thus closing the vent valve and preventing the escape of steam.

No.....	5	5T	6	6T	12A
Each.....	$7.50	7.50	9.50	9.50	23.50
Size Inlet.....inches	¾	¾	¾	¾	1
Radiation Cap.....sq. ft.	2000	2000	3000	3000	15000
Overall Height.....inches	5 3/16	5 3/16	6 3/16	7 1/16	7
Overall Width.....inches	2 7/16	2 7/16	3 1/8	3 1/8	6 5/8
Shipping Weight...pounds	3	3	3	3	8

Hoffman Adjustable Air Vent Valves

For venting radiators or heating units of 1 or 2-pipe gravity steam systems. Automatically fired.

No. 1

Made in angle pattern only. For straight shank applications, use with Hoffman adaptor.

Maximum guaranteed operating pressure, 10 pounds.

Connection, ⅛-inch I.P.S.

Has adjustable vent ports permitting instant adjustment and accurate balancing of steam circulation to radiators of 1-pipe heating systems. By varying the rate of venting, the flow of steam into a radiator can be controlled.

No. 1A

No. 1, Double Shell Construction, Satin Chromium Finish.....each **$2.27**
No. 1A, Chromium Finish.....each **1.76**

Hoffman Adjustable Vacuum Vent Valves

For radiators of 1-pipe gravity vacuum systems, hand or stoker fired.

No. 2

Made in angle pattern only. For straight shank applications, use with Hoffman adaptor.

Maximum guaranteed operating pressure, 10 pounds.

Connection, ⅛-inch I.P.S.

Has double air lock construction which prevents the return of air after the radiator has been completely vented. Adjustable vent port assures uniform distribution of steam. Leakproof construction plus sensitive thermostatic action insures complete venting.

No. 2A

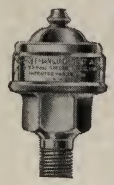
No. 2, Double Shell Construction, Satin Chromium Finish.....each **$3.80**
No. 2A, Chromium Finish.....each **3.02**

No. 4 Hoffman Quick Vent Air Valves

For venting mains of 1 and 2-pipe gravity steam systems ending 18 inches or more above boiler water line, not to be used where water is a factor.

Non-adjustable port, ⅛-inch.
Maximum operating pressure, 10 pounds.
Size connection, ¾-inch male.

No. 4.....each **$2.45**


No. 4

No. 4A Hoffman Quick Vent Float Air Valves

For venting mains of 1 and 2-pipe gravity steam systems, closes against water and steam.

Non-adjustable port, 3/16-inch.

Maximum operating pressure, 10 pounds.

Size connection, ¾-inch male.

No. 4A

No. 4A.....each **$2.92**

No. 40 Hoffman Ventor Non-Adjustable Venting Valves

For Venting Radiators or Heating Units of 1 or 2-Pipe Gravity Steam Systems

Built for strictly competitive conditions.

Embodies traditional Hoffman methods of quality manufacture.

Angle pattern only. Connection, ⅛ inch I.P.S.

No. 40, Nickel Plated.....each **$.72**

No. 70 Hoffman Airport Non-Adjustable Venting Valves

For Venting Radiators or Heating Units of 1 or 2-Pipe Gravity Steam Systems

The sensitive thermostatic action of the valve makes it especially suited to venting convector radiators. Made in angle pattern only. Connection, ⅛ inch I.P.S.

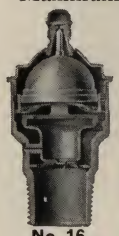
No. 70, Chromium Plated.....each **$1.32**

No. 16 Hoffman Vent Vacuum Valves

For venting steam mains of 1-pipe vacuum systems which end 18 inches or more above boiler water line.

Return of air prevented by double air locks.
Non-adjustable vent port, 1/16-inch.
Maximum operating pressure, 10 pounds.
Size connection, ¾-inch.

No. 16.....each **$4.90**


No. 16

No. 16A Hoffman Quick Vent Float Air and Vacuum Valves

For venting steam mains of 1-pipe vacuum systems, closes against water.

Double air locks prevent return of air to system.

Non-adjustable vent port, 3/16-inch.

No. 16A

Maximum operating pressure, 10 pounds.
Size connections, ¾-inch male; ⅜-inch female.

No. 16A.....each **$3.95**

No. 75 Hoffman Quick Vent Float Air Valves

For venting mains of 1 and 2-pipe gravity steam systems.

Large area float member positively closes port against water leakage.

Non-adjustable vent port, 3/32-inch. Maximum operating pressure, up to 10 pounds.

Size connection, ¾-inch male.

No. 75.....each **$4.90**

No. 75

No. 75A Hoffman Quick Vent Float Air Valves

For venting mains of 1 and 2-pipe gravity steam systems.

Closes against water leakage.

Non-adjustable vent port, ¾-inch.

No. 75A

Maximum operating pressure, 3 pounds.
Size connection, ¾-inch male.

No. 75A.....each **$5.60**

No. 76 Hoffman Quick Vent Float Air and Vacuum Valves

For venting steam mains of 1-pipe vacuum systems.
Double air locks. Non-adjustable vent port, 3/32-inch.
Maximum operating pressure, up to 10 pounds.

Size connection, ¾-inch male.

No. 76.....each **$7.45**

No. 76

No. 76A Hoffman Quick Vent Float Air and Vacuum Valves

For venting steam mains of 1-pipe vacuum systems. Ideal where large amounts of water are encountered.

Double air locks.
Non-adjustable vent port, ¾-inch.
Maximum pressure, 3 pounds.
Size connection, ¾-inch male.

No. 76A

No. 76A.....each **$8.80**

Hoffman Valve Adaptors

Long

Short

Adaptor permits use of angle pattern valves on convector radiators or mains formerly requiring valves of straight shank pattern.

In the Hoffman line are five angle pattern radiator venting valves. With these valves and Hoffman adaptors, any new or old design or convector type radiator can be equipped for efficient venting.

Cadmium finish.

Long

Long adaptor is used when convector fits the enclosure tightly.

Short adaptor is used where there is ample clearance between convector and wall.

Male I.P. Size.....inches	⅛	¼	¾
Long Adaptor.....each	$.31	....	....
Short Adaptor.....each	.22	$.22	$.33

Short

No. 5000 Ideal Variport Air Valves

For Steam Pressures Up to Ten Pounds

Adjustable vent port permits an accurate setting of orifice to provide exact venting rate required for any radiator regardless of location. Complete venting of all radiators can be secured almost simultaneously, and with intermittent automatic firing, assures a more balanced job in which each radiator will have a chance to get its proper share of heat, every time pressure is generated.

Operation is positive, quiet, automatic and does not expel steam or water. Siphon tongue replaces old style siphon tube, simplifies installation on thin radiation, permits use with Detroit adapters for all straight shank applications.

Angle connection, ⅛-inch I.P.T.

Chromium-plated finish.

No. **5000**.....each **$1.65**

No. 300 Arco-Detroit Multiport Air Valves

For 1-Pipe Steam Systems

Limited to Pressure Not Over 3 Pounds

No. 300

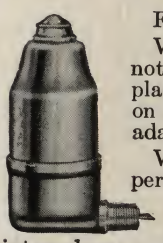
Employs the patented automatic modulator which permits venting at full port opening up to a few ounces pressure and above that automatically reduces opening.

Maximum port may also be adjusted and permanently set by hand through an exceptionally wide range.

Has ⅛-inch angle connection. Black finish. Siphon tongue replaces old style siphon tube, simplifies installation on thin radiation, permits use with Detroit adapters for all straight shank applications.

No. **300**..... each **$1.95**

No. 500 Ideal Airid Siphon Air Valves



For venting low pressure steam radiators.

Vents rapidly and is quiet in operation. Does not hiss, sputter or leak. Siphon tongue replaces old siphon tube, simplifies installation on thin radiation, permits use with Detroit adapters for all straight shank applications.

Valve is non-adjustable and cannot be tampered with.

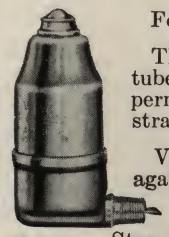
Float contains volatile liquid sealed under vacuum. Steam temperature causes internal gas pressure, expanding diaphragm at bottom of float, closing valve.

Angle Connection, ⅛-Inch I.P.T.

Chromium-plated finish.

No. **500**.....each **$1.30**

No. 510 Ideal Vac-Airid Vacuum Valves



For one pipe vacuum jobs.

The siphon tongue replaces old style siphon tube, simplifies installation on thin radiation, permits use with Detroit adapters for all straight shank applications.

Valve is non-adjustable and self sealing against return of air.

Float contains volatile liquid sealed under vacuum. Steam temperature causes internal gas pressure, expanding diaphragm at bottom of float, closing valve.

Angle connection, ⅛ inch I.P.T.

Chromium-plated finish.

No. **510**.....each **$1.75**

Arco Favorite Air Valves

For Venting Low Pressure Steam Radiators

A straight shank air valve with thermostatic float and siphon.

Is non-adjustable.

No. **526**, ⅛-Inch Male Thread.....each **$.95**
No. **527**, ¼-Inch Male Thread.....each **.95**
No. **528**, ½-Inch Female and ¾-Inch Male Thread
.....each **1.05**

No. 861 Arco Detroit Hurivent Quick Vents

The No. 861 Arco Detroit Hurivent is designed to vent the mains with utmost speed so that the steam can reach the radiators with a minimum of frictional loss.

To accomplish this, the Arco Hurivent has a full ½-inch venting port which, combined with an ingenious internal construction, enables almost instant venting without steam or water leakage.

Entirely automatic. ½-inch female and ¾-inch male thread. Black finish.

No. **861**.....each **$5.40**

No. 862 Arco Vacuum Hurivent Quick Vents

The No. 862 Arco Vacuum Hurivent is designed for operation on vacuum systems. It also provides speedy, complete and dry venting of all air, but prevents the return of the air into the mains when the system cools.

Has a full ½-inch venting port which, combined with an ingenious internal construction, enables almost instant venting without steam or water leakage.

Entirely automatic. ½-inch female and ¾-in. male thread. Chromium plated finish.

No. **862**.....each **$8.80**

No. 1 Vent-Rite Radiator Air Valves

Non-Vacuum—Automatic

Side connection for radiators.

Variable venting with maximum diameter of venting orifice $\frac{3}{32}$ inch.

Come-apart construction. Float seals against water.

Valve pins are nickel silver, and the base is of drop forged brass. Finished in chromium plate.

I.P.S., ⅛ inch.

No. **1**.....each **$1.65**

No. 2398 Scovill Air Valves

Coin Lock Screw

Threaded ⅛-inch outside I.P. size.

No. **2398**, Nickel Plated.....each .....
No. **2398**, Chromium Plated.....each .....

Vent-Rite Radiator Air Valves

No. 2 I.V.S.

No. 3

Variable venting with maximum diameter of venting orifice, 3/32 inch.

Come-apart construction. Float seals against water.

Closes thermostatically under temperature.

Valve pins are nickel silver. Chromium plated.

No. 2 I.V.S.

Side connection for radiators; inner vacuum seal. Drop forged brass base. I.P.S., 1/8 inch.

No. 2 I.V.S.....each **$3.25**

No. 3

Bottom connection for risers, mains and convection type radiators; automatic non-vacuum. I.P.S., 1/4 inch.

No. 3.....each **$2.80**

No. 4 I.V.S. Vent-Rite Radiator Valves

Vacuum—Inner Vacuum Seal—Straight Shank

For risers, mains and convection type radiators.

Bottom connection, 1/4-inch i.p.s.

Inner vacuum seal.

Float seals against water.

Closes thermostatically under temperature.

Come-apart construction.

Variable venting with maximum diameter of venting orifice 3/32 inch.

Chromium plated.

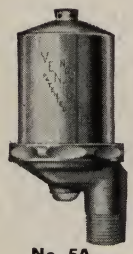
Valve pins are nickel silver.

No. 4 I.V.S.....each **$4.00**

Vent-Rite Radiator Air Valves

Straight Shank

No. 5A—Non-Vacuum
No. 6A I.V.S.—Inner Vacuum Seal



No. 5A

For risers and mains.

Bottom connection, 1/2-inch i.p.s.

Float seals against water. Closes thermostatically under temperature.

Has come-apart construction. Variable venting with maximum diameter of venting orifice, 1/4-inch.

Chromium plated; nickel silver valve pins.

No. 5A.....each **$5.00**
No. 6A I.V.S.....each **6.00**

Vent-Rite Balancers

A solenoid operated valve used in conjunction with vacuum type valves on any automatically fired one-pipe steam system. Installed on the boiler or one of the mains. Electrically connected with the automatic heating unit.

Balancer synchronized with the thermostat and firing unit, automatically returns a system under vacuum to atmospheric pressure at the beginning of every firing cycle.

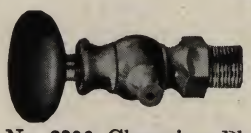
Controlled distribution of steam can only be established in a system in which there is air to vent, after the heating unit starts, hence, the admission of air into the system by means of the Balancer.

Combination chromium and black ripple finish.

Bottom connection.

Each, 3/4-inch male I. P. S..... **$15.00**

No. 2396 Wood Wheel Compression Air Valves



This valve is for hot water radiators. Threaded for 1/8-inch iron pipe.

Wrapped and packed 12 in a box.

No. 2396, Chromium-Plated.....each ....
No. 2396, Nickel-Plated.....each ...

Compression Radiator Air Valves

With Loose Key

1/8-Inch I.P.T., Nickel Plated.....each **$.60**
Extra Keys.....each **.10**

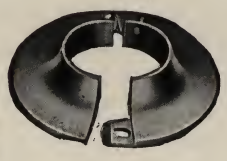
No. 10 Combination Floor and Ceiling Plates

Smooth faced plate with both hinge and catch concealed. Construction guarantees no trouble from faulty springs.

Packed 1 dozen in a box.

Size In.	Steel Black Each	Steel N.P. Each	Steel C.P. Each	Brass Pol. or N.P. Each	Brass C.P. Each	Size In.	Steel Black Each	Steel N.P. Each	Steel C.P. Each	Brass Pol. or N.P. Each	Brass C.P. Each
1/4	$.15	$.27	$.38	$.60	$.81	2 1/2	$.50	$.65	$.91	$1.50	$2.10
3/8	.16	.28	.39	.60	.84	3	.65	.80	1.12	1.80	2.52
1/2	.17	.29	.41	.62	.87	3 1/2	.80	1.00	1.40	....	....
3/4	.18	.30	.42	.65	.91	4	1.00	1.25	1.75	....	....
1	.20	.32	.45	.72	1.01	4 1/2	1.25	1.50	2.10	....	....
1 1/4	.22	.35	.49	.80	1.12	5	1.50	1.75	2.45	....	....
1 1/2	.25	.38	.53	.85	1.19	6	1.75	2.00	2.80	....	....
2	.30	.45	.63	1.00	1.40	...	....	....	....	....	....

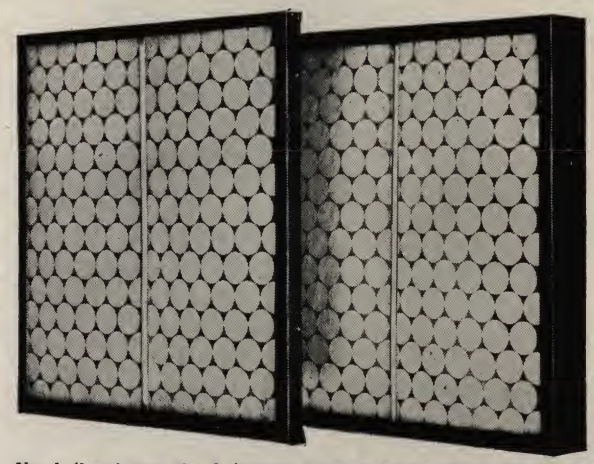
No. 3 Cast Iron Combination Floor and Ceiling Plates



With a positive hinge and catch and a set screw to hold it in place it is anchored to the pipe to stay. An easy plate to apply.

Size In.	Black Each	N. P. Each	Pol. Brass Each	N. P. Brass Each
1/4	$.15	$.27	$1.00	$1.00
3/8	.16	.28	1.00	1.00
1/2	.17	.29	1.00	1.00
3/4	.18	.30	1.20	1.20
1	.20	.32	1.30	1.30
1 1/4	.22	.35	1.60	1.60
1 1/2	.25	.38	1.80	1.80
2	.30	.45	2.00	2.00
2 1/2	.50	.65	2.50	2.50
3	.65	.80	3.00	3.00
3 1/2	.80	1.00	4.00	4.00
4	1.00	1.25	5.00	5.00
4 1/2	1.25	1.50	6.00	6.00
5	1.50	1.75	7.00	7.00
6	1.75	2.00	9.00	9.00
7	2.00	2.25	10.00	10.00
8	2.25	2.50	12.00	12.00
9	2.50	2.75	14.00	14.00
10	2.75	3.00	16.00	16.00
12	3.25	3.50	18.00	18.00

Fiberglas Dust-Stop Air Filters



No. 1 (Left) and No. 2 (Right) Fiberglas Dust-Stop Air Filters

Fiberglas Dust-Stop Air Filters will clean air streams of nuisance dirt, dust and lint.

Dust-Stops are made from compressed mats of glass fibers, sprayed with binder to hold the fibers in place. The fibers are then coated with a dust-catching non-evaporating adhesive having excellent wetting power, will retain viscosity under normal operating conditions and temperatures ranging from 15°F. below to 200°F. above zero.

Filter can be reused after gently rapping out or vacuum cleaning excessive surface dirt accumulations. This practice may be repeated once or twice before the filter is discarded.

Fiberglas Dust-Stop Air Filters are made in two standard types: No. 1 and No. 2.

No. 1, 1 inch thick, is designed for economy in commercial and industrial applications.

No. 2, 2 inches thick, is designed for applications where greater dust-holding capacity permits longer intervals between replacements.

Both may be used in domestic applications. Dust-Stop Air Filters are used by most of the leading manufacturers of furnace and air-conditioning equipment.

Dust-Stop Replacement Type Filters

Dimensions are nominal, clearance over frame parts having been provided for easy replacement.

Packed 12 in a carton.

Size Inches	No. 1 Each	No. 2 Each	Size Inches	No. 1 Each	No. 2 Each
20x25	$1.15	$1.65	16x20	$1.00	$1.50
20x20	1.00	1.50	15x20	1.00	1.50
16x25	1.00	1.50	10x20	.85	1.25

Additional Information on Fiberglas Dust-Stop Air Filter Applications Will Be Furnished on Request

L and V Frames With Filters

Dust-Stop L and V Frames are designed for convenient and correct handling of Dust-Stop Filters.

Made of heavy metal, they meet all Fire, Underwriters', Local Fire Ordinance and Federal Specifications.

Type Frame	Depth Inches	No. of Filters	Size Filters Inches	Per Cell
L	2¾	2	1	$6.00
L	2¾	1	2	6.00
L	4¾	4	1	7.50
L	4¾	2	2	7.50
V	...	4	1	10.00
V	...	2	2	10.00

Fiberglas Dust-Stop Air Filters

L Type Frames—With 20x20x1-Inch Filters

The L type consists of an assembly of interchangeable L-shaped members of cold-rolled steel, painted. These frame members may be assembled vertically or horizontally to provide capacity for any cfm. requirement.

CFM. at 300 FPM.	Each	Frames	Filters	Approx. Ship. Wt. Lb.	CFM. at 300 FPM.	Each	Frames	Filters	Approx. Ship. Wt. Lb.
800	$7.50	1	4	25	25600	$240.00	32	128	480
1600	15.00	2	8	40	26400	247.50	33	132	500
2400	22.50	3	12	55	28000	262.50	35	140	520
3200	30.00	4	16	75	28800	270.00	36	144	540
4000	37.50	5	20	100	31200	292.50	39	156	550
4800	45.00	6	24	110	32000	300.00	40	160	595
5600	52.50	7	28	125	33600	315.00	42	168	620
6400	60.00	8	32	140	35200	330.00	44	176	650
7200	67.50	9	36	145	36000	337.50	45	180	660
8000	75.00	10	40	165	38400	360.00	48	192	710
9600	90.00	12	48	190	39200	367.50	49	196	725
11200	105.00	14	56	225	40000	375.00	50	200	740
12000	112.50	15	60	235	41600	390.00	52	208	775
12800	120.00	16	64	250	43200	405.00	54	216	790
14400	135.00	18	72	285	44800	420.00	56	224	820
16000	150.00	20	80	305	48000	450.00	60	240	870
16800	157.50	21	84	320	52000	487.50	65	260	950
17600	165.00	22	88	340	52800	495.00	66	264	960
19200	180.00	24	96	375	56000	525.00	70	280	1015
20000	187.50	25	100	380	57600	540.00	72	288	1050
20800	195.00	26	104	415	61600	577.50	77	308	1115
21600	202.50	27	108	430	62400	585.00	78	312	1135
22400	210.00	28	112	435	67200	630.00	84	336	1215
24000	225.00	30	120	450	72800	682.50	91	364	1320

V Type Frames—With 20x25x1-Inch Filters

The V type is designed for use where space is limited. Its frontal area is 40 per cent less than that required by an L type assembly of same capacity.

CFM. at 300 FPM.	*Each	Combination	Approx. No. of Units or Cells	Ship. Wt. Lb.	CFM. at 300 FPM.	*Each	Combination	Approx. No. of Units or Cells	Ship. Wt. Lb.
4000	$40.00	1V-2	4	160	30000	$300.00	5V-3	30	855
6000	60.00	1V-3	6	205	32000	320.00	4V-4	32	840
8000	80.00	1V-4 2V-2	8	245 290	36000	360.00	3V-6 6V-3	36	900 1020
10000	100.00	1V-5	10	300	40000	400.00	4V-5 5V-4	40	1010 1035
12000	120.00	1V-6 2V-3 3V-2	12	340 375 415	42000	420.00	3V-7 7V-3	42	1015 1180
14000	140.00	1V-7	14	385	48000	480.00	4V-6 6V-4	48	1175 1235
16000	160.00	2V-4 4V-2	16	455 530	50000	500.00	5V-5	50	1245
18000	180.00	3V-3	18	540	56000	560.00	4V-7 7V-4	56	1335 1425
20000	200.00	2V-5 5V-2	20	545 665	60000	600.00	5V-6 6V-5	60	1455 1480
24000	240.00	2V-6 3V-4 4V-3 6V-2	24	625 650 690 785	70000	700.00	5V-7 7V-5	70	1655 1715
					72000	720.00	6V-6	72	1730
28000	280.00	2V-7 7V-2	28	705 905	84000	840.00	6V-7 7V-6	84	1970 2010
30000	300.00	3V-5	30	785	98000	980.00	7V-7	98	2290

*Prices include all steel plate frame parts, bolts, nuts, a gasket, and four filters for each unit or cell.

HOSPITAL FIXTURES

★ With a more thorough understanding of the germ theory of disease, there has come from surgeons and hospital authorities the world over, a demand for hospital fixtures of all kinds, of such designs and materials that conditions, from an aseptic standpoint, shall be as nearly perfect as possible.

★ Such fixtures are of necessity of a multiplicity of design.

★ We present in the following pages, fixtures that are generally in demand but we are prepared, however, to furnish fixtures to fulfill any requirements of the surgery, or mortuary room, or in hydrotherapy, electrotherapy and physiotherapy departments.

★ We shall be pleased to submit illustrations, information and prices upon application.

No. HF-12106, Sink on Left
No. HF-12107, Sink on Right

Vitreous China Utility and Treatment Sink with integral instrument tray. Supported on painted semi-concealed brackets.

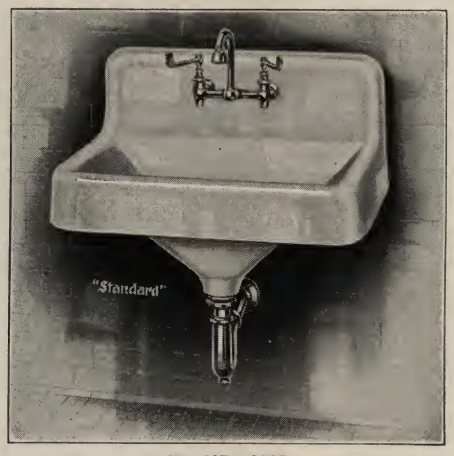
Fittings, all-metal elbow control combination compression faucet with spout, renewable units and integral screwdriver stops; drain plug with open metal grid.

Trap, 1½-inch P pattern with I.P.S. nipple and wall flange.

Exposed metal chromium plated.

Size	inches	40 x22
Sink	inches	17¼x18¼
Depth Sink	inches	8
Instrument Tray	inches	17¼x18¼
Approximate Shipping Weight	pounds	350

Furnished in white only.



No. HP-12065

Surgeons Enameled Cast Iron Wash-Up Sink with integral back and center outlet.

Fittings, all-metal elbow control combination compression faucet with gooseneck spout and spray, renewable units and integral screwdriver stops; drain plug with metal grid.

Trap, 1½-inch P pattern with I.P.S. nipple and wall flange.

Exposed metal chromium plated.

Size	inches	24x20	30x24	34x24
Length	inches	24	30	34
Width	inches	20	24	24
Depth at Outlet	inches	15	15	15
Height of Back	inches	10	10	10
Approximate Shipping Weight	pounds	179	223	268

Furnished in acid-resisting white enamel only.

No. HF-12147

Vitreous China Lavatory with oval bowl and rear outlet. Supported on vitreous china leg and metal wall brackets.

Fittings, all-metal elbow control combination compression faucet with spout and spray, stand pipe holder, renewable units, and integral screwdriver stops. Recessed open drain plug with celluloid stand pipe.

Trap, 1½-inch P pattern with I.P.S. nipple and wall flange.

Excellent for treatment and public use in contagion sections.

Nominal Size	inches	24x18
Bowl	inches	16x13½
Height from Floor	inches	32
Approx. Ship. Wt., with Fittings	pounds	95

Furnished in white only.

No. HF-12145

Vitreous China Lavatory with back, square bowl, anti-splash rim, rear outlet, open overflow, and cast-in soap dish. Supported on concealed wall hangers.

Fittings, all-metal knee control mixing valve fitting with tempered water supply pipe to rigid gooseneck spout, brace for attaching to wall, and drain plug with metal grid and 1½-inch O.D. tubing tail-piece.

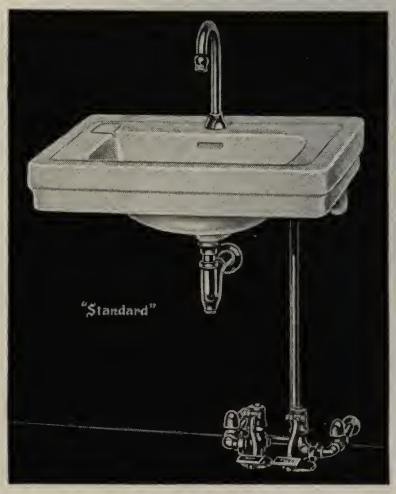
Supply pipes, ½-inch I.P. size to wall with dome shield angle stops and escutcheons.

Trap, 1½-inch P pattern with metal wall flange.

Exposed metal chromium-plated.

Nominal Size	inches	20x18	24x20
Bowl	inches	14x10½	16¾x11¾
Height of Back	inches	6	7
Approx. Ship. Wt. Less Fittings	pounds	58	86

Furnished in white or colors.



No. HF-12161

Vitreous China Lavatory with square bowl, anti-splash rim, rear outlet, open overflow, and cast-in soap dish. On concealed wall support with enameled wall brackets and bars.

Fittings, all-metal foot control valve fitting with supply pipe to rigid gooseneck spout, brace for attaching to wall, and drain plug with metal grid and 1½-inch O.D. tubing tail-piece.

Supply pipes, ½-inch I.P. size to wall with dome shield straight stops and escutcheons.

Trap, 1½-inch P pattern with metal wall flange.

Exposed metal chromium-plated.

Nominal Size	inches	20x18	24x20
Bowl	inches	14x10¾	16¾x12
Approximate Shipping Weight Less Fittings	pounds	75	90

Furnished in white or colors.

No. HF-12240

Institutional Vitreous China Lavatory with back, rear outlet, and open overflow.

Fittings, all-metal concealed supply fitting with metal spout, self-closing push button valves for hot and cold water. Integral slow-draining outlet with 1¼-inch drain connection through rear. Trap not furnished.

Supply valves regularly furnished for walls not exceeding 1 inch in thickness. Can be furnished for other wall thicknesses when specified.

Adapted for mental and correctional institutions where tamper-proof fixtures and fittings are required.

Exposed metal chromium plated.

Length	inches	20
Width	inches	16
Bowl	inches	14½x11
Height of Back	inches	6
Approx. Ship. Wt., with Fittings	pounds	73

Also available with cold water supply only.

Furnished in white only.

No. HP-13009

Enameled Cast Iron Continuous Flow Bath, painted outside, with roll rim and cradle hooks. Painted legs.

Fittings, thermostatic mixing valve with dial thermometer, wall support, 4-arm control valve, supply pipes and tempered line to wall, regulating stops with renewable units, vacuum breaker, cast brass floor flanges, ¾-inch supply to bath, 4-bell supply in tub, 3-inch connected drain and over-flow with hinged skimming shield, quick opening lever-operated gate valve on drain arm, canvas cradle and restraining sheet.

Length	inches	78
Width Over Rim	inches	33
Depth Inside	inches	20
Floor to Top of Rim	inches	28
Approx. Shipping Weight Complete	pounds	713

Furnished in regular or acid-resisting white enamel.

No. HF-13430

Madera Syphon Jet Closet Combination

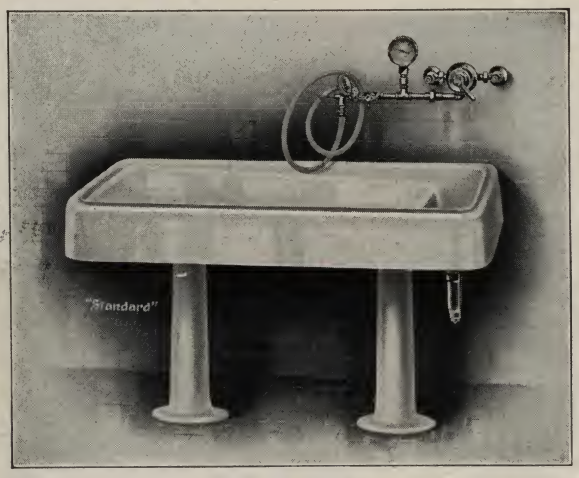
Bowl, vitreous china, syphon jet type, elongated pattern, with concealed jet and top supply inlet.

Fittings, elevated flush valve with screwdriver angle stop, metal oscillating handle, 1½-inch straight flush connection, wall and spud flanges, china bolt caps, built-in bed pan cleanser with 4-arm Re-Nu control valves, vacuum breaker, rubber hose, self-closing lever control spray and hook.

Seat, black hard rubber, with open front and check hinge, less cover.

Exposed metal chromium plated.

Wall to Front	inches	27
Width Closet	inches	14
Height Over All	inches	50
Approximate Shipping Weight	pounds	110



No. HP-13225

Infants' Enameled Cast Iron Slab with sink at end. Supported on painted pedestals.

Fittings, thermostatic mixing valve with dial thermometer, ½-inch checks and angle stops, 4-arm control valve with rubber hose and spray; drain plug with open metal grid.

Trap, 1½-inch P pattern with I.P.S. nipple and wall flange.

Exposed metal chromium plated.

Size	inches	54x27
Height, Floor to Rim	inches	36
Approximate Shipping Weight	pounds	446

Furnished in acid-resisting white enamel only.

No. HP-13545

Enameled Cast Iron Service Sink with cast brass combined flushing rim and guard. Supported on trap standard.

Fittings, flush valve with metal oscillating handle and angle stop, flush pipe, combination compression faucet with renewable units, 4-arm handles, integral stops, long spout with bucket hook and brace, and metal grid strainer.

Cast iron adjustable trap, standard enameled inside, painted outside, threaded for 3-inch I. P. to wall.

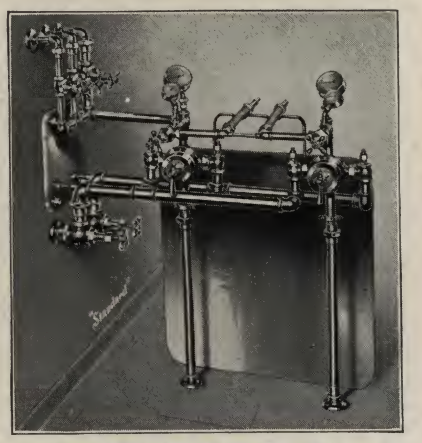
Exposed metal chromium plated.

Size	inches	24x20
Height Overall	inches	57
Height, Floor to Rim	inches	28¼
Wall to Front	inches	20¾
Depth Inside	inches	12½
Approximate Shipping Weight	pounds	186

Furnished in white only.

Control Units for Hydrotherapy Departments

Exposed Type



No. HK-12460, Fittings at Left
No. HK-12462, Fittings at Right

A fully exposed control unit for hydrotherapy departments, providing thermostatically-controlled tempered water for scotch alternating douches, needle and overhead showers, and sitz bath or perineal douche.

Leonard thermostatic mixing valves, 1¼-inch inlet valves; tempered water valves on wall, 1-inch for needle shower, ¾-inch for overhead shower, ½-inch for perineal or sitz bath; 4-arm compression control valves, stainless steel splash shield.

Exposed metal chromium plated.

Height on Wall	inches	52
Wall to Outside	inches	44
Front to Back	inches	28
Approximate Shipping Weight	pounds	275

No. HK-12645 Hydrotherapeutic Showers

Hydrotherapeutic shower with four uprights each having four removable face cast sprays with volume regulators, all top sprays with adjustable ball joint.

Combination top brace and supply to sprays to wall.

Bent arm shower head with cast 5-inch removable face and adjustable ball joint.

All supply risers and uprights are connected with braces to wall supports for added strength.

Cast floor escutcheons.

Shower head and sprays operate independently by remote control.

Shower head can be placed on right, left, or rear walls.

Exposed metal chromium plated.

Distance Between Uprights	inches	32
Height Over All	inches	84
Approximate Shipping Weight	pounds	400

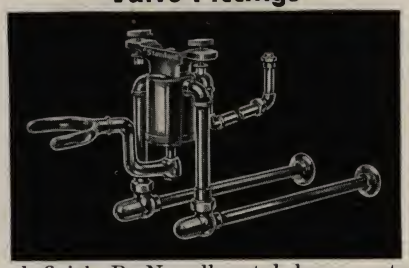
No. HK-15005 Lavatory Fittings

Re-Nu compression combination lavatory supply and drain fitting with quick compression valves, wrist control indexed metal handles. ⅜-inch gooseneck spout with spray, and drain plug with integral metal grid and 1¼-inch O.D. tubing tailpiece.

No. HK-**15005**, Nickel-Plated.....each ....

No. HK-**15005**, Chromard Finish..each ....

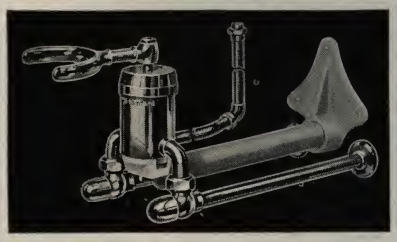
No. HK-15081 Re-Nu Knee Control Mixing Valve Fittings



Chromard finish Re-Nu all-metal knee control mixing valve fitting with tempered water supply pipe to spout, with union connection, and supply pipes to wall with ½-inch dome shield angle stops and escutcheons. Brace for attaching to under side of fixture. Supplies, 6-inch centers.

No. HK-**15081**.....each ....

No. HK-15086 Re-Nu Knee Control Mixing Valve Fittings

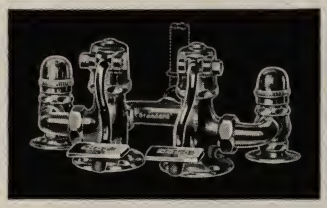


Re-Nu all-metal knee control mixing valve fitting with tempered water supply pipe to spout, with union connection, brace for attaching to wall, and supply pipes to wall with ½-inch dome shield angle stops and escutcheons.

No. HK-**15086**, Nickel-Plated.....each ....

No. HK-**15086**, Chromard Finish.....each ....

No. HK-15110 Foot Control Self-Closing Supply Valves



Exposed double pattern foot control self-closing supply valve with dome shield regulating stops to floor, ½-inch inside I.P.S. inlets, and ½-inch inside I.P.S. union yoke outlet. Hot and cold water valves 10 in. center to center.

No. HK-**15110**, Nickel-Plated.....each .....

No. HK-**15110**, Chromard Finish.....each .....

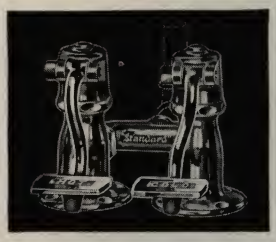
No. HK-15111 Foot Control Self-Closing Supply Valves

Exposed single pattern foot control self-closing supply valve with ½-inch inside I.P.S. inlet and ½-inch inside I.P.S. union outlet. Specify if for hot or cold water.

No. HK-**15111**, Nickel-Plated.....each .....

No. HK-**15111**, Chromard Finish.....each .....

No. HK-15112 Foot Control Self-Closing Supply Valves

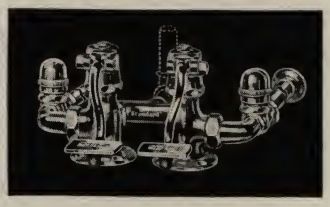


Exposed double pattern foot control self-closing supply valve with ½-inch inside I.P.S. inlets and ½-inch inside I.P.S. union yoke outlet. Hot and cold water valves. Inlets 4 inches center to center.

No. HK-**15112**, Nickel-Plated.....each .....

No. HK-**15112**, Chromard Finish.....each .....

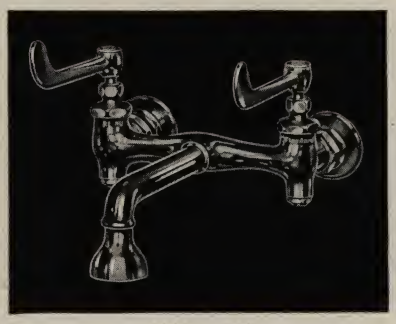
No. HK-15114 Foot Control Self-Closing Supply Valves



Exposed double pattern foot control self-closing supply valve with dome shield regulating stops, ½-inch inside I.P.S. inlets and ½-inch inside I.P.S. union yoke outlet. Hot and cold water inlets to connect to supply pipes from wall, 10 inches center to center.

No. HK-**15114**, Nickel-Plated.....each .....
No. HK-**15114**, Chromard Finish.....each .....

No. HK-15263 Re-Nu Combination Supply Fittings

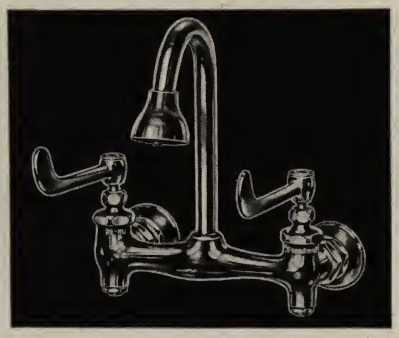


Re-Nu combination supply fitting with wrist-controlled indexed handles, integral screwdriver regulating stops, and spray on rigid spout.

Inlets threaded ½-inch inside I.P.S., 8 inches center to center.

No. HK-**15263**, N.P..each ....
No. HK-**15263**, Chromard Finish.ea. ....

No. HK-15275 Re-Nu Combination Supply Fittings



Re-Nu combination supply fitting with wrist-controlled indexed integral handles, screwdriver regulating stops, and spray on rigid gooseneck spout.

Inlets threaded ½-inch inside I.P.S., 8 inches center to center.

No. HK-**15275**, N.P..each ....
No. HK-**15275**, Chromard Finish.ea. ....

No. HK-15319 Re-Nu Bedpan Washers

Re-Nu bedpan washer for cold water only. All-metal 4-arm indexed handle and escutcheon, loose key volume regulator with renewable unit, rubber hose, self-closing lever handle faucet with spray and hook.

Inlet threaded ½-inch I.P.S.

Exposed metal chromium plated.

No. HK-**15319**.....each ....

Gooseneck Supply Spouts

No. HK-15510

Chromard finish gooseneck spout with ⅜-inch I.P. size plain tip, threaded ½-inch I.P. size.

Shank with ¼-inch I.P. coupling through slab.

No. HK-**15510**, with Plain Tip .....each ....

No. HK-**15515**, with Spray.each ....

No. HK-15528 Gooseneck Spouts

Gooseneck spout with spray and adjustable flange, threaded ½-inch I.P. size.

No. HK-**15528**, Nickel-Plated.....each .....
No. HK-**15528**, Chromard Finish.....each .....
Also furnished with plain tip.

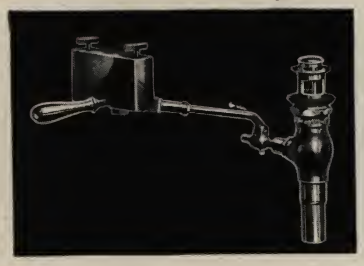
No. HK-15165 Foot-Operated Pop-Up Drains

Foot-operated pop-up drain with 1¼-inch tailpiece.

No. HK-**15165**, Nickel-Plated.....each .....

No. HK-**15165**, Chromard Finish....each .....

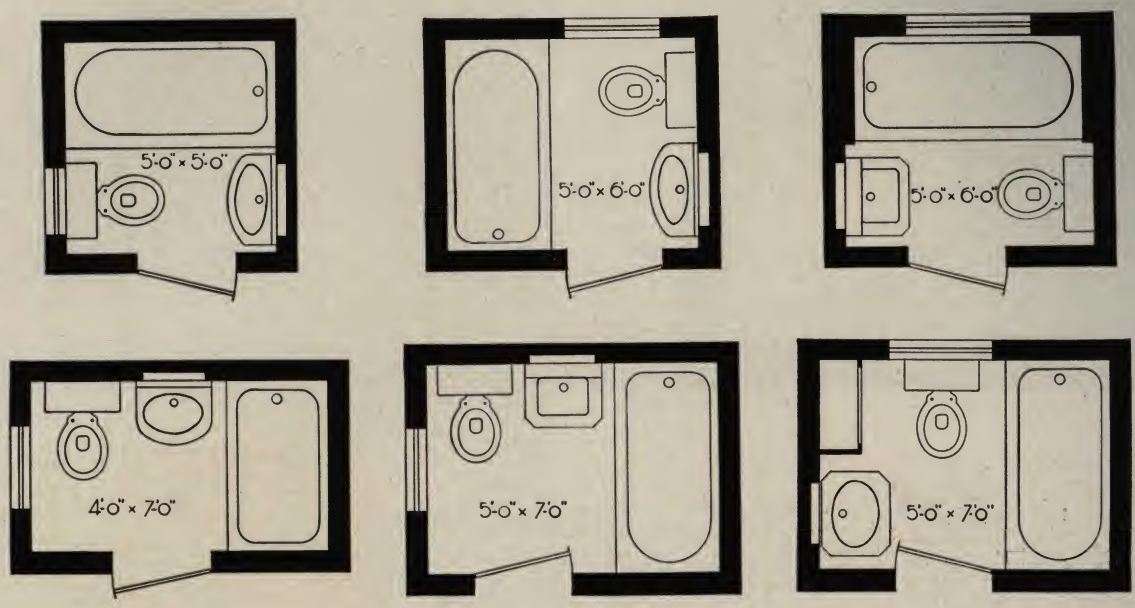
No. HK-15170 Knee Control Pop-Up Drains



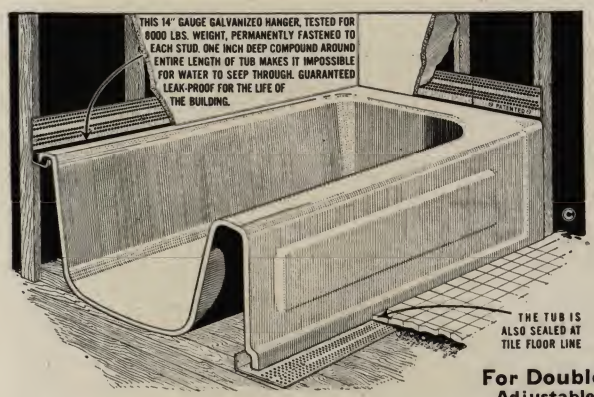
Knee control pop-up drain with metal handle and 1¼-inch O.D. tubing tailpiece. For attaching to vitreous china lavatory with overflow.

No. HK-**15170**, Nickel-Plated.....each .....
No. HK-**15170**, Chromard Finish.....each .....

SUGGESTED PLANS FOR SMALL BATHROOMS



THESE PLANS developed by experts, represent practical bathroom arrangements, fixtures being placed in the most convenient positions and with regard to location of windows and doors. The plans cannot provide for every space requirement, but these should prove quite helpful when planning a bathroom where limited space is available.



Lucke Leakproof Bathtub Hangers

Adaptable to all tubs and types of wall construction. Firmly holds tub along its entire edge. Acts as a permanent water seal between any wall and the edges of a built-in tub or shower receptor and between front apron flange of tub and floor.

Made of heavy gage galvanized steel in the form of a trough, the upper part being perforated to form a base for plaster, cement, tile or other wall material to key into.

Adjustable from 4 to 6 feet in length and 30 to 33 inches in width. Also made from 33 to 36 inches in width and made for any special tub or shower receptor.

Hanger is tested to support a weight of 8000 pounds or over.

*Furnished with base strip. †Has special cut in corner to take care of lugs. ‡Reversible for right or left-hand installation.

For Double Shell Recess Tubs

28 Inches Wide

*No. L-102, Recess Neuvogue..$23.92
No. L-104, Recess Neuvogue.. 21.45

29 Inches Wide

*No. L-108, Recess Delmar....$23.92
No. L-109, Recess Delmar.... 21.45

Adjustable 30 to 32 In. in Width

*No. L-112, Full Recess.....$23.92
No. L-113, Full Recess..... 21.45
*†No. L-112-K, Recess Cosmopolitan..... 23.92
†No. L-113-K, Recess Cosmopolitan..... 21.45

Adjustable 33 to 36 In. in Width

*No. L-400, Full Recess.....$25.58
No. L-410, Full Recess..... 23.10

For Double Shell Corner Tubs

32½ Inches Wide

*No. L-202, R-H. Cor. Neuvogue.$26.40
*No. L-203, L-H. Cor. Neuvogue. 26.40
No. L-204, R-H. Cor. Neuvogue. 24.15
No. L-207, L-H. Cor. Neuvogue. 24.15

For Double Shell Corner Tubs

Adjustable 30 to 32 In. in Width

*No. L-212, R-H. Corner, Regular$26.40
*No. L-213, L-H. Corner, Regular 26.40
No. L-214, R-H. Corner, Regular 24.15
No. L-215, L-H. Corner, Regular 24.15

29 Inches Wide

*No. L-228, R-H. Corner Delmar.$26.40
*No. L-229, L-H. Corner Delmar 26.40
No. L-230, R-H. Corner Delmar. 24.15
No. L-231, L-H. Corner Delmar. 24.15

Adjustable 33 to 36 In. in Width

*No. L-500, R-H. Corner, Regular$30.00
No. L-505, R-H. Corner, Regular 30.00
*No. L-506, L-H. Corner, Regular 27.60
No. L-509, L-H. Corner, Regular 27.60

For Double Shell Square Tubs

48 Inches Wide

*No. L-170, Crane Square Tub..$30.00
No. L-172, Crane Square Tub... 24.95

46½ Inches Wide

*No. L-174, Kohler Times Square 30.00
No. L-176, Kohler Times Square. 24.95

For Double Shell Square Tubs

49½ Inches Wide

*No. L-180, Standard Square.. $30.00
No. L-182, Standard Square... 24.95
*‡No. L-186, Std. Square Corner 30.00
‡No. L-187, Std. Square Corner 24.95

Tile Front Instead of Apron

Adjustable 30 to 33 In. in Width

No. L-300, Recess..... $19.50
No. L-306, R-H. Corner..... 22.50
No. L-309, L-H. Corner..... 22.50

Adjustable 33 to 36 In. in Width

No. L-600, Recess..... $20.44
No. L-604, R-H. Corner..... 24.76
No. L-609, L-H. Corner..... 24.76

For Roll Rim or Painted Outside Tubs

Adjustable 27 to 30 In. in Width

No. L-800, Recess..... $21.00
No. L-804, R-H. Corner..... 23.25
No. L-809, L-H. Corner..... 23.25

Special Hangers

32 Inches Wide

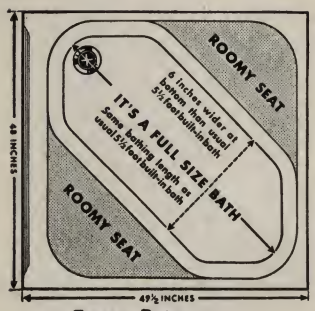
No. L-111, Briggs, Steel Recess. $20.62
No. L-208, Briggs, Steel R-H. Cor. 22.80
No. L-211, Briggs, Steel L-H. Cor. 22.80

"Standard" Baths

"Standard" Baths are made of the one material proven by decades of use to be the best for this fixture—enamel on cast iron. They are favorably known the world over, and "Master Pembroke" is now a synonym for double shell bath. The beauty and durability of "Standard" Baths has resulted in their being installed in more buildings, from the finest type to the most modest, than any other make.

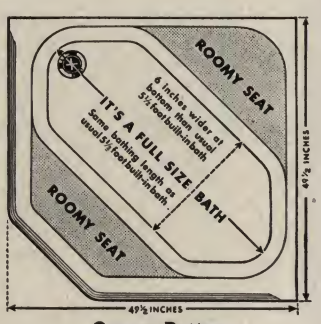
"Standard" Neo-Angle Baths

The Neo-Angle alone presents a departure from the traditional bathtub shape. The four foot square Neo-Angle Bath with its two integral seats is the outstanding advance in bath design in a generation. Distinctive, smart, different, its installation marks the bathroom as definitely modern.

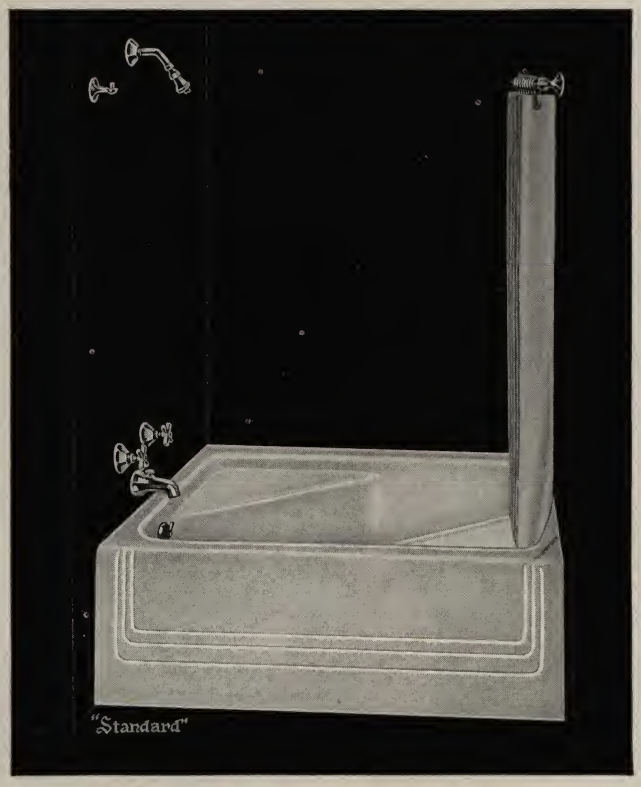


Recess Pattern

A new degree of safety is achieved in the Neo-Angle in the ease of merely sitting on the front seat to enter or leave. Its wide flat bottom is added safety for the standing shower, though the sitting shower (using rear seat) is a new luxury, exclusively Neo-Angle.



Corner Pattern



No. P-2100-AK, Left Outlet and Pop-Up Drain
No. P-2105-AK, Right Outlet and Pop-Up Drain
No. P-2100-AI, Left Outlet with Drain and Rubber Stopper
No. P-2105AI, Right Outlet with Drain and Rubber Stopper

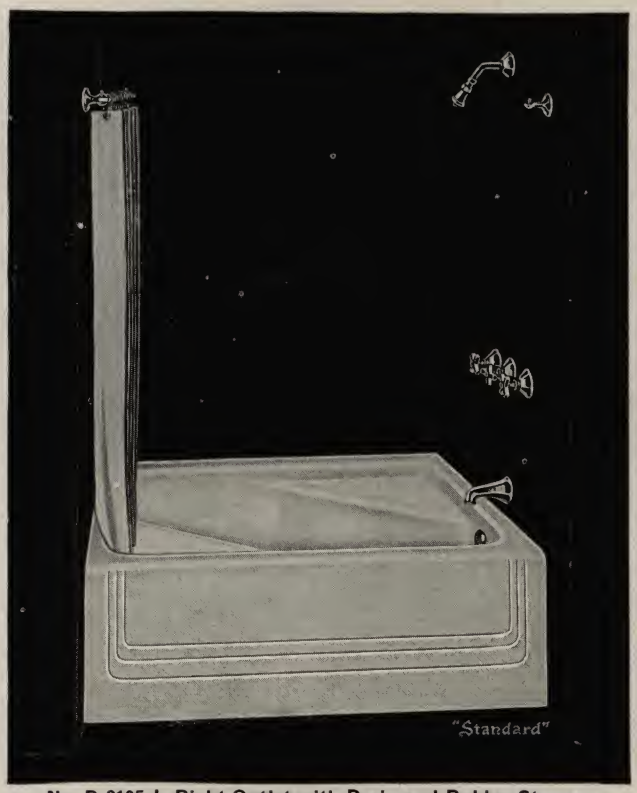
Neo-Angle Enameled Cast Iron Built-in Recess Bath having two integral seats and diagonal tub with left outlet.

Fittings, all-metal combination built-in shower and bath fitting with over rim supply spout, with integral diverter valve to shower, two ½-inch compression valves for bath with renewable units, cross handles and escutcheons, adjustable shower head with ball joint, bent supply arm, and escutcheon 1½-inch pop-up drain and with lever handle operating through overflow, telescopic curtain rod with pins, white duck curtain, and wall hooks for supporting rod in either closed or extended position.

Exposed metal chromium-plated.

Length Over All	inches	48
Length from Finished Wall Lines	inches	46½
Width Over All, Front to Back	inches	49½
Width, Front to Finished Back Wall	inches	48¾
Height, Rim to Center of Curtain Rod	inches	45
Front Line of Bath to Center of Curtain Rod	inches	5½
Depth at Outlet	inches	15
Height from Floor	inches	15½
Height Over All	inches	16
Width of Rim	inches	3½
Approximate Shipping Weight, Less Fittings	pounds	525

Furnished in regular white and acid-resisting white or colored enamel.



No. P-2105-I, Right Outlet with Drain and Rubber Stopper
No. P-2100-I, Left Outlet with Drain and Rubber Stopper
No. P-2105-K, Right Outlet with Pop-Up Drain
No. P-2100-K, Left Outlet with Pop-Up Drain

Neo-Angle Enameled Cast Iron Built-In Recess Bath having two integral seats and diagonal tub with right outlet.

Fittings, all-metal combination built-in shower and bath fitting with over-rim supply spout, ½-inch transfer valve for shower, two ½-inch compression valves for bath, with renewable units, cross handles, and escutcheons, adjustable shower head with ball joint, bent supply arm, and escutcheon, 1½-inch connected drain and overflow with bead chain and rubber stopper, and telescopic curtain rod with pins, white duck curtain, and wall hooks for supporting rod in either closed or extended position.

Exposed metal chromium-plated.

Length Over All	inches	48
Length from Finished Wall Lines	inches	46½
Width Over All, Front to Back	inches	49½
Width, Front to Finished Back Wall	inches	48¾
Height, Rim to Center of Curtain Rod	inches	45
Front Line of Bath to Center of Curtain Rod	inches	5½
Depth at Outlet	inches	15
Height from Floor	inches	15½
Height Over All	inches	16
Width of Rim	inches	3½
Approximate Shipping Weight Less Fittings	pounds	525

Furnished in regular white and acid-resisting white or colored enamel.

No. P-2100-U, Left Outlet and Drain with Rubber Stopper
No. P-2105-U, Right Outlet and Drain with Rubber Stopper
No. P-2100-V, Left Outlet and Pop-Up Drain
No. P-2105-V, Right Outlet and Pop-Up Drain

Neo-Angle Enameled Cast Iron Built-In Recess Bath having two integral seats and diagonal tub with left outlet.

Fittings, all-metal combination built-in shower and bath fitting with over rim supply spout, two ½-inch compression valves for shower, two ½-inch compression valves for bath with renewable units, cross handles, and escutcheons, adjustable shower head with ball joint, bent supply arm, and escutcheon, 1½-inch connected drain and overflow with bead chain and rubber stopper, and telescopic curtain rod with pins, white duck curtain, and wall hooks for supporting rod in either closed or extended position.

Exposed metal chromium-plated.

Length Over All	inches	48
Length from Finished Wall Lines	inches	46½
Width Over All, Front to Back	inches	49½
Width, Front to Finished Back Wall	inches	48¾
Height, Rim to Center of Curtain Rod	inches	45
Front Line of Bath to Center of Curtain Rod	inches	5½
Depth at Outlet	inches	15
Height from Floor	inches	15½
Height Over All	inches	16
Width of Rim	inches	3½
Approximate Shipping Weight, Less Fittings	pounds	525

Furnished in regular white and acid-resisting white or colored enamel.

No. P-2105-L, Right Outlet with Drain and Rubber Stopper
No. P-2100-L, Left Outlet with Drain and Rubber Stopper
No. P-2105-T, Right Outlet with Pop-Up Drain
No. P-2100-T, Left Outlet with Pop-Up Drain

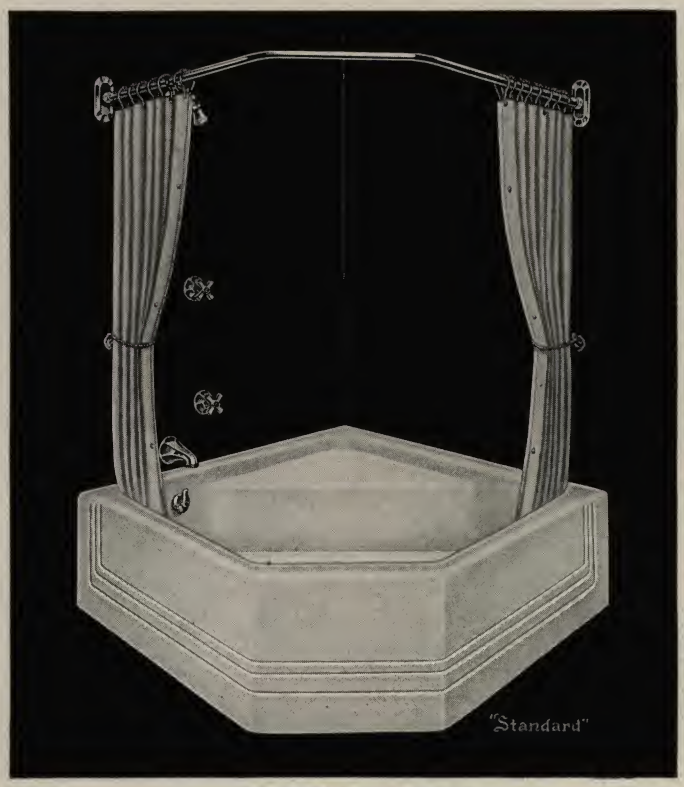
Neo-Angle Enameled Cast Iron Recess Bath having two integral seats and diagonal tub with right outlet.

Fittings, all-metal combination built-in shower and bath fitting with over-rim supply spout, two ½-inch compression valves for bath, with renewable units, cross handles, and escutcheons, adjustable spray shower head with ball joint, bent supply arm, and escutcheon, ½-inch mixing shower valve with metal handle and escutcheon, 1½-inch valve connected drain and overflow with bead chain and rubber stopper, and telescopic curtain rod with pins, white duck curtain, and wall hooks for supporting rod in either closed or extended position.

Exposed metal chromium plated.

Length Over All	inches	48
Length from Finished Wall Lines	inches	46½
Width Over All, Front to Back	inches	49½
Width, Front to Finished Back Wall	inches	48¾
Height, Rim to Center of Curtain Rod	inches	45
Front Line of Bath to Center of Curtain Rod	inches	5½
Depth at Outlet	inches	15
Height from Floor	inches	15½
Height Over All	inches	16
Width of Rim	inches	3½
Approx. Ship. Wt., Less Fittings	pounds	525

Furnished in regular white and acid-resisting white or colored enamel.



No. P-2110-V, Left Outlet
No. P-2115-V, Right Outlet

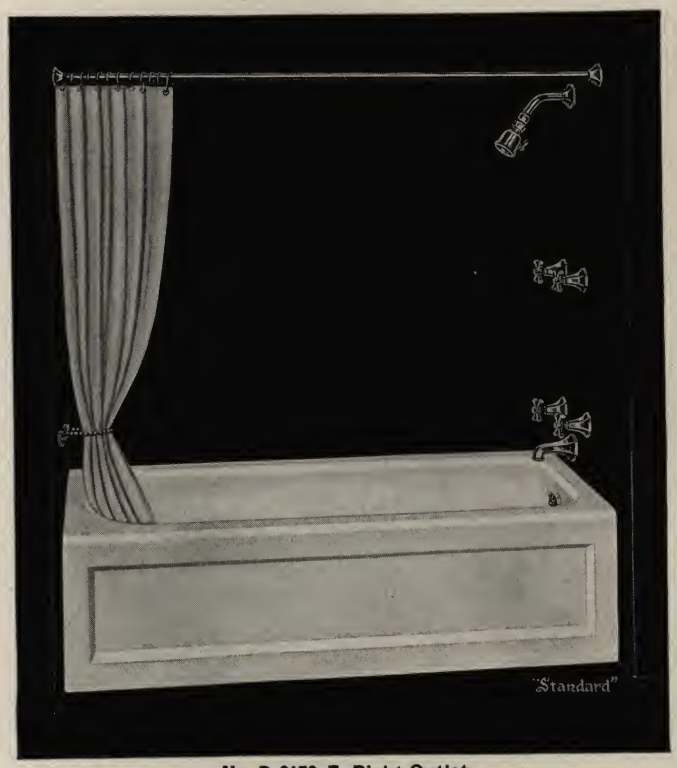
Neo-Angle Enameled Cast Iron Built-In Corner Bath having two integral seats and tub with left outlet.

Fittings, all-metal combination built-in shower and bath fitting with over rim supply spout, two ½-inch compression valves for shower, two ½-inch compression valves for bath with renewable units, cross handles, and escutcheons, adjustable shower head with ball joint, bent supply arm, and escutcheon, pop-up drain with lever handle through overflow, and corner curtain rod with pins and two special white duck curtains with hold-back hooks and chains.

Exposed metal chromium-plated.

Length Over All Along Built-In Sides	inches	49½
Corner of Finished Walls to Front of Bath	inches	59½
Depth at Outlet	inches	15
Height from Floor	inches	15½
Height Over All	inches	16
Width of Rim	inches	3½
Approximate Shipping Weight, Less Fittings	pounds	590

Furnished in regular white and acid-resisting white or colored enamel.



No. P-2172-F, Right Outlet
No. P-2177-F, Left Outlet

Royalton Enameled Cast Iron Recess Bath to build into recess, with outlet in end wall.

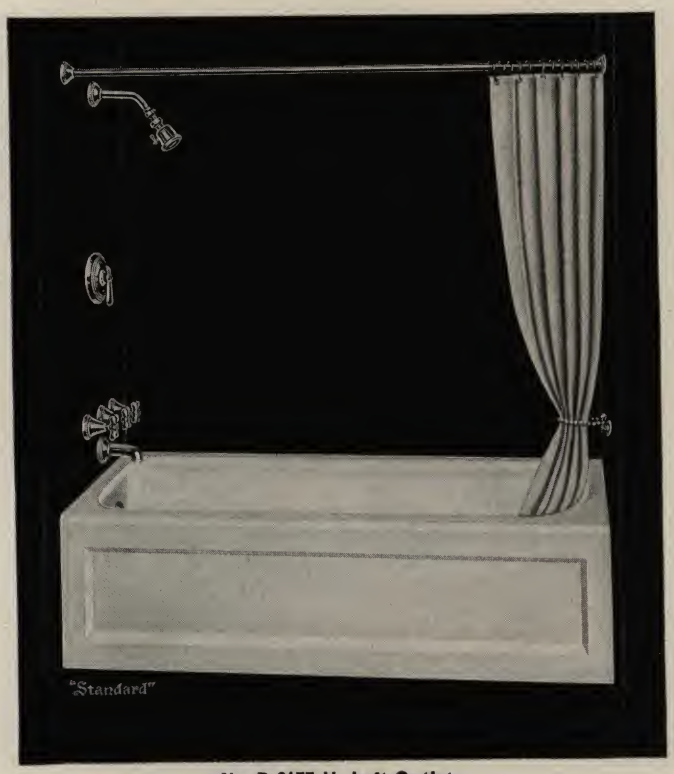
Fittings, all-metal combination built-in shower and bath fitting with over-rim supply spout, two ½-inch compression valves for shower, two ½-inch compression valves for bath, with renewable units, cross handles, and escutcheons, adjustable shower head with ball joint, bent supply arm, and escutcheon, 1½-inch pop-up drain with lever handle operating through overflow, curtain rod, holdback hook, and chain.

Exposed metal chromium plated.

Nominal Size	feet	5½
Length Over All	inches	68
Length from Finished Wall Lines	inches	66½
Width Over All	inches	36½
Width from Finished Wall Line	inches	35½
Depth Inside	inches	17
Height from Floor	inches	17½
Height Over All	inches	18
Width of Rim	inches	4½
Approx. Ship. Wt., Less Fittings	pounds	600

Furnished in acid-resisting white or colored enamel.

Curtain and pins not furnished.



No. P-2177-H, Left Outlet
No. P-2172H, Right Outlet

Royalton Enameled Cast Iron Recess Bath to build into recess, with left outlet.

Fittings, all-metal combination built-in shower and bath fitting with over-rim supply spout, two ½-inch compression valves for bath, with renewable units, cross handles, and escutcheons, adjustable shower head with ball joint, bent supply arm, and escutcheon, ½-inch mixing shower valve with metal handle and escutcheon, 1½-inch pop-up drain with cross handle through wall, curtain rod, holdback hook, and chain.

Exposed metal chromium plated.

Nominal Size	feet	5½
Length Over All	inches	68
Length from Finished Wall Lines	inches	66½
Width Over All	inches	36¼
Width from Finished Wall Line	inches	35½
Depth Inside	inches	17
Height from Floor	inches	17½
Height Over All	inches	18
Width of Rim	inches	4½
Approx. Ship. Wt., Less Fittings	pounds	600

Furnished in acid-resisting white or colored enamel.

Curtain and pins not furnished.

No. P-2207-I, Right Corner and Drain with Rubber Stopper
No. P-2212-I, Left Corner and Drain with Rubber Stopper
No. P-2207-K, Right Corner with Pop-Up Drain
No. P-2212-K, Left Corner with Pop-Up Drain

Master Pembroke Enameled Cast Iron Corner Bath to build into corner, with outlet at built-in end.

Fittings, all-metal combination built-in shower and bath fitting with over-rim supply spout, ½-inch transfer valve for shower, two ½-inch compression valves for bath, with renewable units, cross handles, and escutcheons, adjustable shower head with ball joint, bent supply arm, and escutcheon, 1½-inch connected drain and overflow with bead chain and rubber stopper, curtain rod and hold-back hook and chain.

Curtain and pins not furnished.

Exposed metal chromium-plated.

Nominal Sizes	feet	4½	5	5½
Length Overall	in.	54	60	66
Width Overall	in.	30¾	30¾	30¾
Depth Inside	in.	15¼	15¼	15¼
Height from Floor	in.	15½	15½	15½
Height Overall	in.	16	16	16
Width of Rim	in.	3¾	3¾	3¾
Approximate Shipping Weight, less Fittings	pounds	405	435	465

Furnished in regular white and acid-resisting white or colored enamel.

No. P-2207-NR, Right Corner
No. P-2212-NR, Left Corner

Master Pembroke Enameled Cast Iron Bath to build into corner, with outlet at built-in end.

Fittings, all-metal combination built-in bath supply and drain, with over rim supply spout, two ½-inch built-in compression valves with renewable units, cross handles, and escutcheons, and 1½-inch connected drain and overflow with bead chain and rubber stopper.

Exposed metal chromium plated.

Nominal Sizes	feet	4½	5	5½
Length Overall	inches	54	60	66
Width Overall	inches	30¾	30¾	30¾
Depth Inside	inches	15¼	15¼	15¼
Height from Floor	inches	15½	15½	15½
Height Overall	inches	16	16	16
Width of Rim	inches	3¾	3¾	3¾
Approx. Ship. Wt., less Ftgs	pounds	405	435	465

Regular white and acid-resisting white or colored enamel.

No. P-2210-Q, Left Corner
No. P-2205-Q, Right Corner

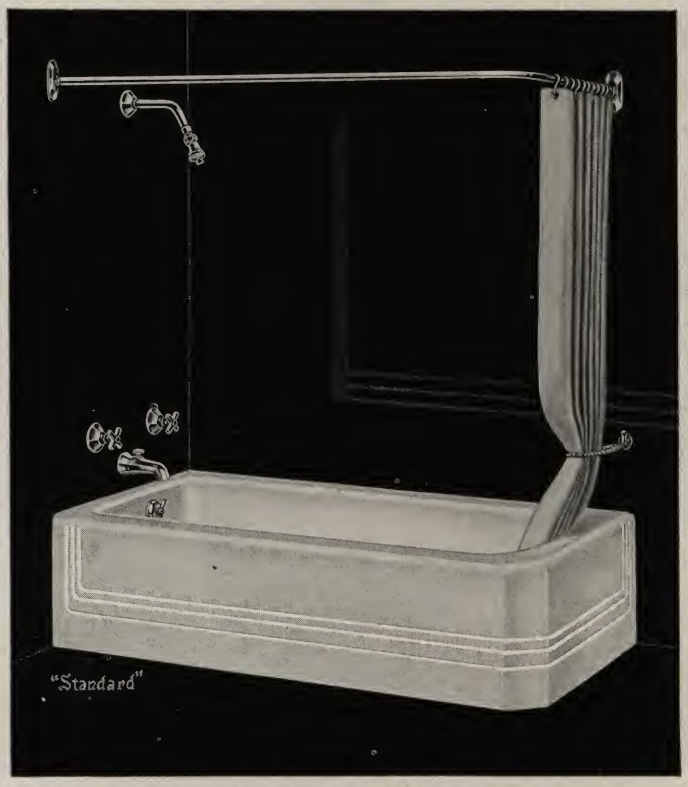
Master Pembroke Enameled Cast Iron Bath to build into corner, with outlet at exposed end.

Fittings, all-metal combination exposed bath supply and drain, with over rim supply spout, two ½-inch built-in compression valves with renewable units, cross handles, supply pipes, and escutcheons, and pop-up lift drain and overflow with 1½-inch outlet connection for either O.D. tubing or I.P. thread.

Exposed metal chromium plated.

Nominal Sizes	feet	4½	5	5½
Length Overall	inches	54	60	66
Width Overall	inches	30¾	30¾	30¾
Depth Inside	inches	15¼	15¼	15¼
Height from Floor	inches	15½	15½	15½
Height Overall	inches	16	16	16
Width of Rim	inches	3¾	3¾	3¾
Approx. Ship. Wt., less Ftgs	pounds	405	435	465

Regular white and acid-resisting white or colored enamel.



No. P-2212-AK, Left Corner and Pop-Up Drain
No. P-2207-AK, Right Corner and Pop-Up Drain
No. P-2212-AI, Left Corner and Drain with Rubber Stopper
No. P-2207-AI, Right Corner and Drain with Rubber Stopper

Master Pembroke Enameled Cast Iron Corner Bath to build into left corner with left end outlet.

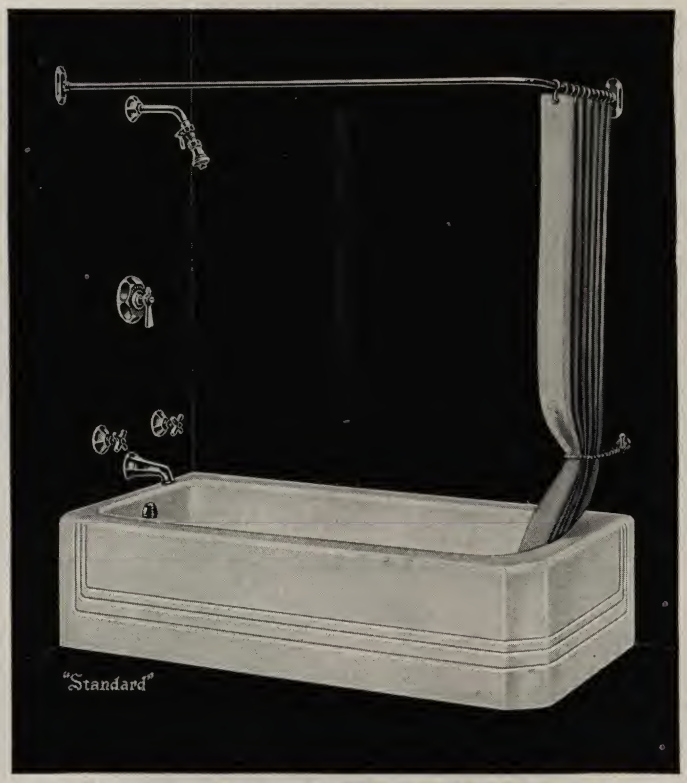
Fittings, all-metal combination built-in shower and bath fitting with over-rim supply spout with integral diverter valve to shower, two ½-inch compression valves for bath with renewable units, cross handles and escutcheons, adjustable shower head with ball joint, bent supply arm, and escutcheon, 1½-inch pop-up drain with lever handle operating through overflow, and curtain rod, holdback hook, and chain.

Curtain and pins not furnished.

Exposed metal chromium plated.

Nominal Sizes	feet	4½	5	5½
Length Over All	inches	54	60	66
Lgth; from Finished Wall Line	inches	53¼	59¼	65¼
Width Over All	inches	30¾	30¾	30¾
Width from Finished Wall Line	inches	30	30	30
Depth Inside	inches	15¼	15¼	15¼
Height from Floor	inches	15½	15½	15½
Height Over All	inches	16	16	16
Width of Rim	inches	3¾	3¾	3¾
Approx. Ship. Wt., Less Fittings	lbs.	405	435	465

Furnished in regular white and acid-resisting white or colored enamel.



No. P-2212-L, Left Corner and Drain with Rubber Stopper
No. P-2207-L, Right Corner and Drain with Rubber Stopper
No. P-2212-T, Left Corner and Pop-Up Drain
No. P-2207-T, Right Corner and Pop-Up Drain

Master Pembroke Enameled Cast Iron Corner Bath to build into left corner, with left end outlet.

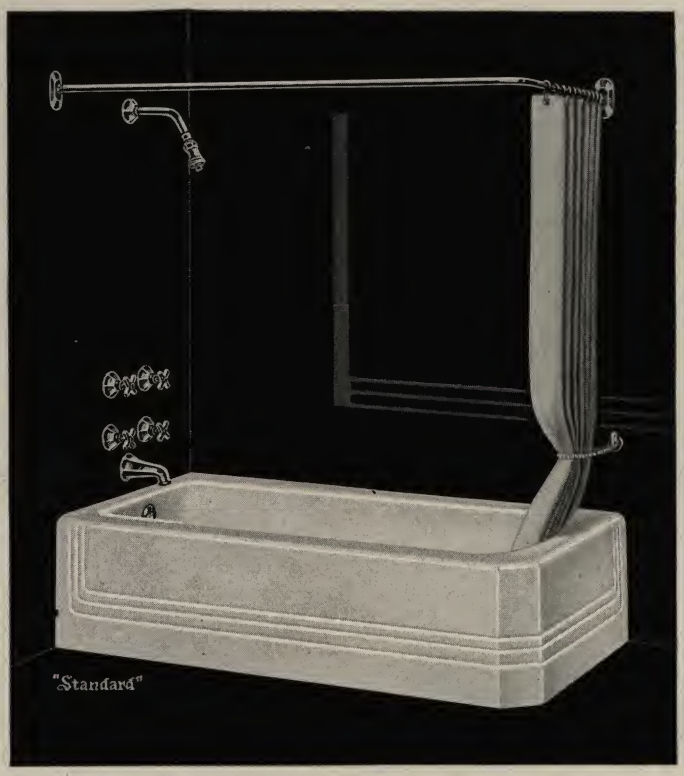
Fittings, all-metal combination built-in shower and bath fitting with over-rim supply spout, two ½-inch built-in compression valves with renewable units, cross handles, and escutcheons, adjustable shower head with volume regulator, ball joint, and bent supply arm, ½-inch mixing shower valve with metal handle and escutcheon, 1½-inch connected drain and overflow with bead chain and rubber stopper, curtain rod, holdback hook, and chain.

Exposed metal chromium-plated.

Nominal Sizes	feet	4½	5	5½
Length Over All	inches	54	60	66
Length from Finished Wall Line	inches	53¼	59¼	65¼
Width Over All	inches	30¾	30¾	30¾
Width from Finished Wall Line	inches	30	30	30
Depth Inside	inches	15¼	15¼	15¼
Height from Floor	inches	15½	15½	15½
Height Over All	inches	16	16	16
Width of Rim	inches	3¾	3¾	3¾
Approximate Shipping Weight Less Fittings	pounds	405	432	465

Furnished in regular white and acid-resisting white or colored enamel.

Curtain and pins not furnished.



No. P-2212-M, Left Corner and Drain with Rubber Stopper
No. P-2207-M, Right Corner and Drain with Rubber Stopper
No. 2212-S, Left Corner and Pop-Up Drain
No. 2207-S, Right Corner and Pop-Up Drain

Master Pembroke Enameled Cast Iron Corner Bath to build into left corner, with left end outlet.

Fittings, all-metal combination built-in shower and bath fitting with over-rim supply spout, four ½-inch built-in compression valves for bath and shower, renewable units, cross handles, and escutcheons, adjustable shower head with ball joint and bent supply arm, 1½-inch connected drain and overflow with bead chain and rubber stopper, curtain rod, holdback hook, and chain.

Curtain and pins not furnished.

Exposed metal chromium plated.

Nominal Size.....feet	4½	5	5½
Length Over All.....inches	54	60	66
Length from Finished Wall Line...in.	53¼	59¼	65¼
Width Over All.....inches	30¾	30¾	30¾
Width from Finished Wall Line.inches	30	30	30
Depth Inside.....inches	15¼	15¼	15¼
Height from Floor.....inches	15½	15½	15½
Height Over All.....inches	16	16	16
Width of Rim.....inches	3¾	3¾	3¾
Approx. Ship. Wt., less Fittings...lbs.	364	400	428

Furnished in regular white and acid-resisting white or colored enamel.

No. P-2225-T, Right Outlet and Pop-Up Drain
No. P-2227-T, Left Outlet and Pop-Up Drain
No. P-2225-L, Right Outlet and Drain with Rubber Stopper
No. P-2227-L, Left Outlet and Drain with Rubber Stopper

Master Pembroke Enameled Cast Iron Recess Bath to build into recess, with right end outlet.

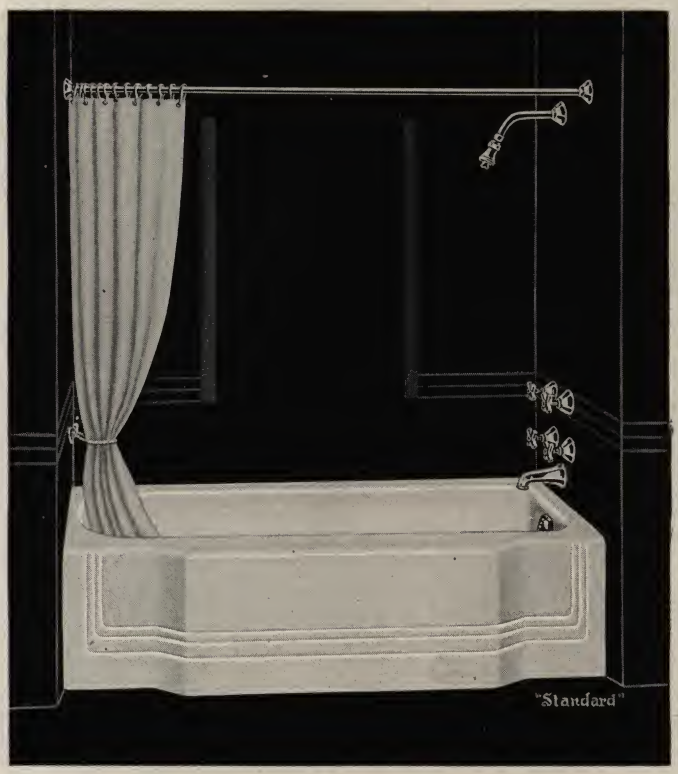
Fittings, all-metal combination built-in shower and bath fitting with over rim supply spout, two ½-inch built-in compression valves with renewable units, cross handles, and escutcheons, adjustable shower head with volume regulator, ball joint, and bent supply arm, ½-inch mixing shower valve with metal handle and escutcheon, 1½-inch pop-up drain with operating lever through overflow curtain rod, holdback hook and chain.

Curtain and pins not furnished.

Exposed metal chromium plated.

Nominal Size.....feet	4½	5	5½
Length Overall.....inches	54	60	66
Width Overall at Ends.....inches	30¾	30¾	30¾
Width Overall at Center.....inches	32¾	32¾	32¾
Depth Inside.....inches	15¼	15¼	15¼
Height from Floor.....inches	15½	15½	15½
Height Overall.....inches	16	16	16
Width of Rim at Ends.....inches	3¾	3¾	3¾
Width of Rim at Center.....inches	5¾	5¾	5¾
Approx. Ship. Wt., less Fittings...lb.	330	365	410

Furnished in regular white and acid-resisting white or colored enamel.



No. P-2225-M, Right Outlet and Drain with Rubber Stopper
No. P-2227-M, Left Outlet and Drain with Rubber Stopper
No. P-2225-S, Right Outlet and Pop-Up Drain
No. P-2227-S, Left Outlet and Pop-Up Drain

Master Pembroke Enameled Cast Iron Recess Bath to build into recess, with right end outlet.

Fittings, all-metal combination built-in shower and bath fitting with over rim supply spout, four ½-inch built-in compression valves for bath and shower, with renewable units, cross handles, and escutcheons, adjustable shower head with ball joint, and bent supply arm, 1½-inch connected drain and overflow with chain and rubber stopper, curtain rod, holdback hook and chain.

Curtain and pins not furnished.

Exposed metal chromium-plated.

Nominal Size	feet	4½	5	5½
Length Overall	inches	54	60	66
Width Overall at Ends	in.	30¾	30¾	30¾
Width Overall at Center	in.	32¾	32¾	32¾
Depth Inside	inches	15¼	15¼	15¼
Height from Floor	inches	15½	15½	15½
Height Overall	inches	16	16	16
Width of Rim at Ends	inches	3¾	3¾	3¾
Width of Rim at Center	in.	5¾	5¾	5¾
Approx. Ship. Wt., less Ftgs.	pounds	330	365	410

Furnished in regular white and acid-resisting white or colored enamel.

No. P-2225-NR, Right Outlet
No. P-2227-NR, Left Outlet

Master Pembroke Enameled Cast Iron Bath to build into recess, with rim seat and end outlet.

Fittings, all-metal combination built-in bath supply and drain, with over rim supply spout; two ½-inch built-in compression valves with renewable units, cross handles, and escutcheons; 1½-inch connected drain and overflow with bead chain and rubber stopper.

Exposed metal chromium plated.

Nominal Size	feet	4½	5	5½
Length Overall	inches	54	60	66
Width Overall at Ends	inches	30¾	30¾	30¾
Width Overall at Center	inches	32¾	32¾	32¾
Depth Inside	inches	15¼	15¼	15¼
Height from Floor	inches	15½	15½	15½
Height Overall	inches	16	16	16
Width of Rim at Ends	inches	3¾	3¾	3¾
Width of Rim at Center	inches	5¾	5¾	5¾
Approx. Ship. Wt., less Fittings	pounds	365	385	440

Regular white and acid-resisting white or colored enamel.

No. P-2225-QR, Right Outlet
No. P-2227-QR, Left Outlet

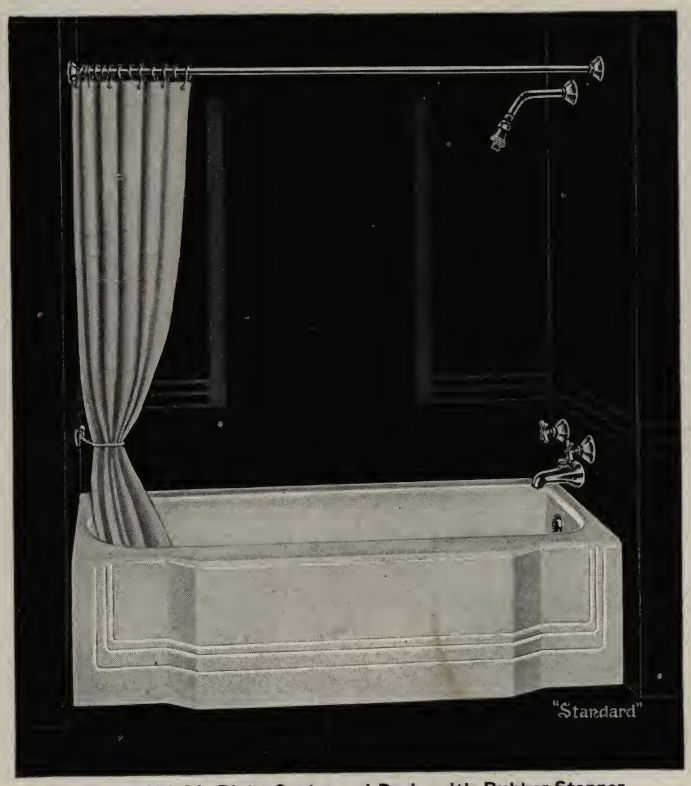
Master Pembroke Enameled Cast Iron Bath to build into recess, with rim seat and end outlet.

Fittings, all-metal combination built-in bath supply with over rim supply spout, two ½-inch built-in compression valves with renewable units, cross handles, and escutcheons. Pop-up drain, 1½-inch, with lever through overflow.

Exposed metal chromium plated.

Nominal Size	feet	4½	5	5½
Length Overall	inches	54	60	66
Width Overall at Ends	inches	30¾	30¾	30¾
Width Overall at Center	inches	32¾	32¾	32¾
Depth Inside	inches	15¼	15¼	15¼
Height from Floor	inches	15½	15½	15½
Height Overall	inches	16	16	16
Width of Rim at Ends	inches	3¾	3¾	3¾
Width of Rim at Center	inches	5¾	5¾	5¾
Approx. Ship. Wt., less Ftgs.	pounds	365	385	440

Regular white and acid-resisting white or colored enamel.



No. P-2225-AI, Right Outlet and Drain with Rubber Stopper
No. P-2227-AI, Left Outlet and Drain with Rubber Stopper
No. P-2225-AK, Right Outlet and Pop-Up Drain
No. P-2227-AK, Left Outlet and Pop-Up Drain

Master Pembroke Enameled Cast Iron Recess Bath to build into recess, with rim seat and end outlet.

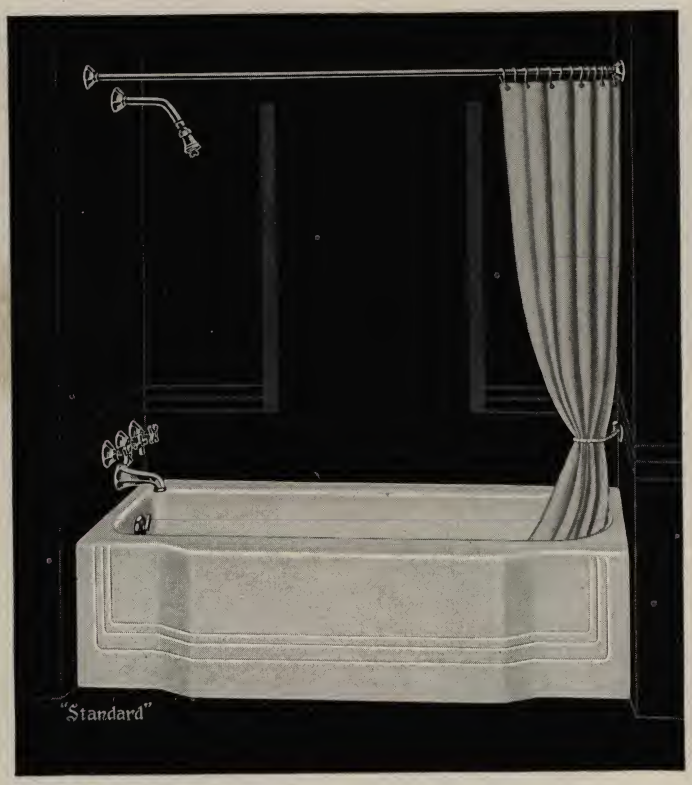
Fittings, all-metal combination built-in shower and bath fitting with over rim supply spout with integral diverter valve to shower, two ½-inch compression valves for bath, with renewable units, cross handles and escutcheons, adjustable shower head with ball joint, and bent supply arm, 1½-inch connected drain and overflow, with bead chain and rubber stopper, curtain rod and holdback hook and chain.

Curtain and pins not furnished.

Exposed metal chromium-plated.

Nominal Sizes	feet	4½	5	5½
Length Overall	inches	54	60	66
Width Overall at Ends	inches	30¾	30¾	30¾
Width Overall at Center	inches	32¾	32¾	32¾
Depth Inside	inches	15¼	15¼	15¼
Height from Floor	inches	15½	15½	15½
Height Overall	inches	16	16	16
Width of Rim at Ends	inches	3¾	3¾	3¾
Width of Rim at Center	inches	5¾	5¾	5¾
Approximate Shipping Weight, less Fittings	pounds	365	385	440

Furnished in regular white and acid-resisting white or colored enamel.



No. P-2227-K, Left Outlet and Pop-Up Drain
No. P-2225-K, Right Outlet and Pop-Up Drain
No. P2227-I, Left Outlet and Drain with Rubber Stopper
No. P-2225-I, Right Outlet and Drain with Rubber Stopper

Master Pembroke Enameled Cast Iron Recess Bath to build into recess with rim seat and end outlet.

Fittings, all-metal combination built-in shower and bath fitting with over-rim supply spout, ½-inch transfer valve for shower, two ½-inch compression valves for bath, with renewable units, cross handles, and escutcheons, adjustable shower head with ball joint, bent supply arm, and escutcheon, 1½-inch pop-up drain with lever through overflow, curtain rod, hold-back hook, and chain.

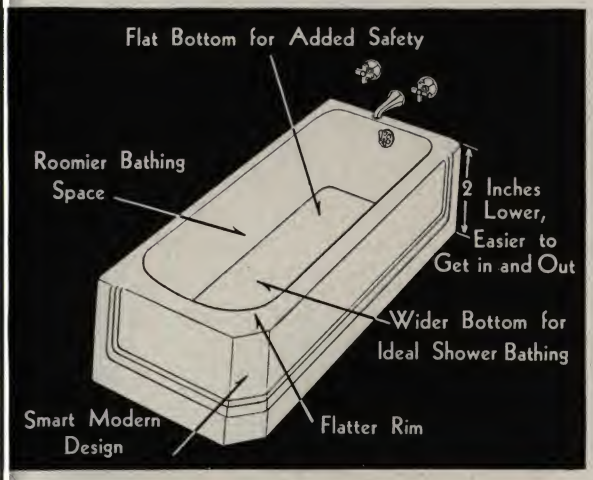
Curtain and pins not furnished.

Exposed metal chromium-plated.

Nominal Sizes	feet	4½	5	5½
Length Over All	inches	54	60	66
Length from Finished Wall Line	inches	52½	58½	64½
Width Over All At Ends	inches	30¾	30¾	30¾
Width Over All at Center	inches	32¾	32¾	32¾
Depth Inside	inches	15¼	15¼	15¼
Height from Floor	inches	15½	15½	15½
Height Over All	inches	16	16	16
Width of Rim at Ends	inches	3¾	3¾	3¾
Width of Rim at Center	inches	5¾	5¾	5¾
Approximate Shipping Weight Less Fittings	pounds	365	385	440

Furnished in regular white and acid-resisting white or colored enamel.

No. P-2227-V, Left Outlet and Pop-Up Drain
No. P-2225-V, Right Outlet and Pop-Up Drain
No. P-2227-U, Left Outlet and Drain with Rubber Stopper
No. P-2225-U, Right Outlet and Drain with Rubber Stopper



Features of the Master Pembroke

The Master Pembroke possesses a rare combination of beauty and added safety features that make bathing a new pleasure.

The unusually low rim makes it easier and safer to enter and leave and the wide, flatter bottom provides surer footing and allows greater freedom while enjoying an invigorating shower.

For those who prefer to bathe instead of shower, the Master Pembroke offers bathing space larger than most tubs and in addition provides the main factor of a really modern, attractive bathroom—a bath that is captivating to the eye—lastingly beautiful—a distinct asset to your home and comfort.

The Master Pembroke is available in white and ten striking colors allowing full range of color preferences.

Master Pembroke Enameled Cast Iron Recess Bath to build into recess with rim seat and end outlet.

Fittings, all-metal combination built-in shower and bath fitting with over-rim supply spout, two ½-inch built-in compression valves for shower, two ½-inch compression valves for bath with renewable units, cross handles, and escutcheons, adjustable spray shower head with ball joint, bent supply arm, and escutcheon, 1½-inch pop-up drain with lever through overflow, curtain rod and holdback hook and chain.

Curtain and pins not furnished.

Exposed metal chromium plated.

Nominal Sizes	feet	4½	5	5½
Length Overall	inches	54	60	66
Width Overall at Ends	inches	30¾	30¾	30¾
Width Overall at Center	inches	32¾	32¾	32¾
Depth Inside	inches	15¼	15¼	15¼
Height from Floor	inches	15½	15½	15½
Height Overall	inches	16	16	16
Width of Rim at Ends	inches	3¾	3¾	3¾
Width of Rim at Center	inches	5¾	5¾	5¾
Approx. Ship. Wt., Less Fittings	pounds	365	385	440

Furnished in regular white and acid-resisting white or colored enamel.

No. P-2397-NR, Fitting on Left
No. P-2396-NR, Fitting on Right

Triwald Enameled Cast Iron Recess Bath to build into recess, with left outlet.

Fittings, all-metal combination built-in bath supply and drain with over-rim supply spout, two ½-inch built-in compression valves with renewable units, cross handles, and escutcheons, and 1½-inch connected drain and overflow with bead chain and rubber stopper.

Exposed metal chromium plated.

Nominal Size	inches	44
Length Over All	inches	44
Width Over All	inches	29
Depth Inside	inches	17
Height from Floor	inches	17½
Height Over All	inches	18
Width of Rim	inches	3
Approximate Shipping Weight, less Fittings	pounds	300

Furnished in regular white enamel only.

No. P-2225-AI, Right Outlet and Drain with Rubber Stopper
No. P-2227-AI, Left Outlet and Drain with Rubber Stopper
No. P-2225-AK, Right Outlet and Pop-Up Drain
No. P-2227-AK, Left Outlet and Pop-Up Drain

Master Pembroke Enameled Cast Iron Recess Bath to build into recess, with rim seat and end outlet.

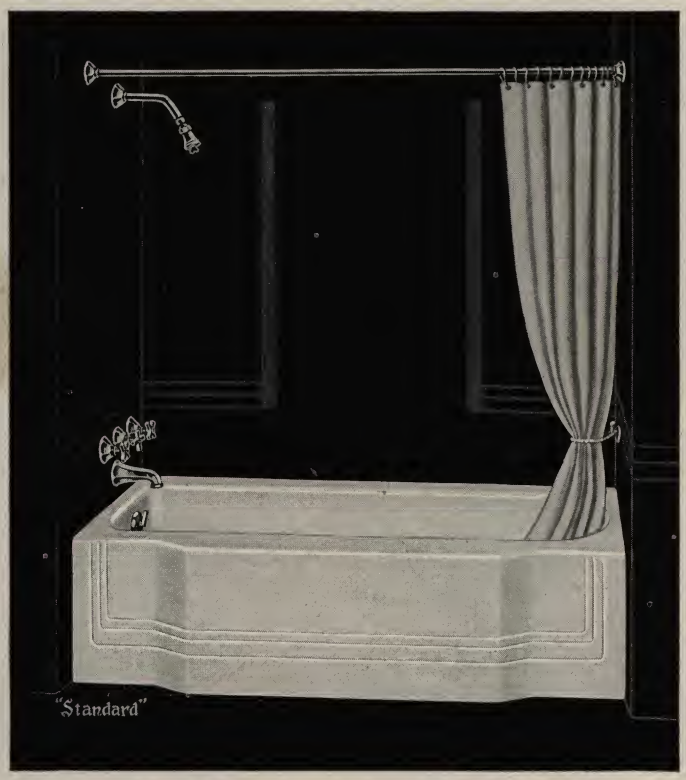
Fittings, all-metal combination built-in shower and bath fitting with over rim supply spout with integral diverter valve to shower, two ½-inch compression valves for bath, with renewable units, cross handles and escutcheons, adjustable shower head with ball joint, and bent supply arm, 1½-inch connected drain and overflow, with bead chain and rubber stopper, curtain rod and holdback hook and chain.

Curtain and pins not furnished.

Exposed metal chromium-plated.

Nominal Sizes	feet	4½	5	5½
Length Overall	inches	54	60	66
Width Overall at Ends	inches	30¾	30¾	30¾
Width Overall at Center	inches	32¾	32¾	32¾
Depth Inside	inches	15¼	15¼	15¼
Height from Floor	inches	15½	15½	15½
Height Overall	inches	16	16	16
Width of Rim at Ends	inches	3¾	3¾	3¾
Width of Rim at Center	inches	5¾	5¾	5¾
Approximate Shipping Weight, less Fittings	pounds	365	385	440

Furnished in regular white and acid-resisting white or colored enamel.



No. P-2227-K, Left Outlet and Pop-Up Drain
No. P-2225-K, Right Outlet and Pop-Up Drain
No. P2227-I, Left Outlet and Drain with Rubber Stopper
No. P-2225-I, Right Outlet and Drain with Rubber Stopper

Master Pembroke Enameled Cast Iron Recess Bath to build into recess with rim seat and end outlet.

Fittings, all-metal combination built-in shower and bath fitting with over-rim supply spout, ½-inch transfer valve for shower, two ½-inch compression valves for bath, with renewable units, cross handles, and escutcheons, adjustable shower head with ball joint, bent supply arm, and escutcheon, 1½-inch pop-up drain with lever through overflow, curtain rod, hold-back hook, and chain.

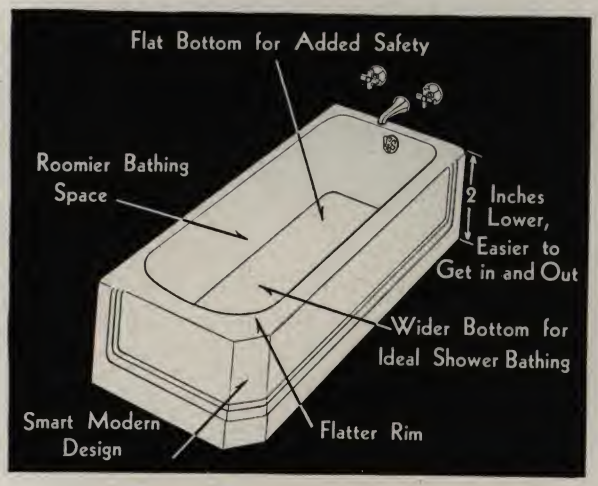
Curtain and pins not furnished.

Exposed metal chromium-plated.

Nominal Sizes	feet	4½	5	5½
Length Over All	inches	54	60	66
Length from Finished Wall Line	inches	52½	58½	64½
Width Over All At Ends	inches	30¾	30¾	30¾
Width Over All at Center	inches	32¾	32¾	32¾
Depth Inside	inches	15¼	15¼	15¼
Height from Floor	inches	15½	15½	15½
Height Over All	inches	16	16	16
Width of Rim at Ends	inches	3¾	3¾	3¾
Width of Rim at Center	inches	5¾	5¾	5¾
Approximate Shipping Weight Less Fittings	pounds	365	385	440

Furnished in regular white and acid-resisting white or colored enamel.

No. P-2227-V, Left Outlet and Pop-Up Drain
No. P-2225-V, Right Outlet and Pop-Up Drain
No. P-2227-U, Left Outlet and Drain with Rubber Stopper
No. P-2225-U, Right Outlet and Drain with Rubber Stopper



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The Master Pembroke is available in white and ten striking colors allowing full range of color preferences.

Master Pembroke Enameled Cast Iron Recess Bath to build into recess with rim seat and end outlet.

Fittings, all-metal combination built-in shower and bath fitting with over-rim supply spout, two ½-inch built-in compression valves for shower, two ½-inch compression valves for bath with renewable units, cross handles, and escutcheons, adjustable spray shower head with ball joint, bent supply arm, and escutcheon, 1½-inch pop-up drain with lever through overflow, curtain rod and holdback hook and chain.

Curtain and pins not furnished.

Exposed metal chromium plated.

Nominal Sizes	feet	4½	5	5½
Length Overall	inches	54	60	66
Width Overall at Ends	inches	30¾	30¾	30¾
Width Overall at Center	inches	32¾	32¾	32¾
Depth Inside	inches	15¼	15¼	15¼
Height from Floor	inches	15½	15½	15½
Height Overall	inches	16	16	16
Width of Rim at Ends	inches	3¾	3¾	3¾
Width of Rim at Center	inches	5¾	5¾	5¾
Approx. Ship. Wt., Less Fittings	pounds	365	385	440

Furnished in regular white and acid-resisting white or colored enamel.

No. P-2397-NR, Fitting on Left
No. P-2396-NR, Fitting on Right

Triwald Enameled Cast Iron Recess Bath to build into recess, with left outlet.

Fittings, all-metal combination built-in bath supply and drain with over-rim supply spout, two ½-inch built-in compression valves with renewable units, cross handles, and escutcheons, and 1½-inch connected drain and overflow with bead chain and rubber stopper.

Exposed metal chromium plated.

Nominal Size	inches	44
Length Over All	inches	44
Width Over All	inches	29
Depth Inside	inches	17
Height from Floor	inches	17½
Height Over All	inches	18
Width of Rim	inches	3
Approximate Shipping Weight, less Fittings	pounds	300

Furnished in regular white enamel only.

No. P-2421-NR, Left Outlet
No. P-2420-NR, Right Outlet

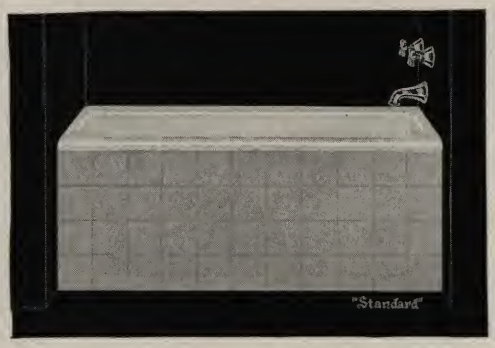
Kovald Enameled Cast Iron Recess Bath to build into recess, with left outlet.

Fittings, all-metal combination built-in bath supply and drain, with over rim supply spout, two ½-inch built-in compression valves with renewable units, cross handles, and escutcheons, and 1½-inch connected drain and overflow with bead chain and rubber stopper.

Exposed metal chromium plated.

Nominal Size	inches	48
Length OverAll	inches	48
Length from Finished Wall Lines	inches	46½
Width Over All	inches	29
Width from Finished Wall Line	inches	28¼
Depth Inside	inches	17
Height from Floor	inches	17½
Height Over All	inches	18
Width of Rim	inches	3
Approximate Shipping Weight, less Fittings	pounds	375

Furnished in regular white enamel only.



No. P-2430-NR, Right Outlet
No. P-2431-NR, Left Outlet

Recwald Enameled Cast Iron Recess Bath to build into recess, with right outlet.

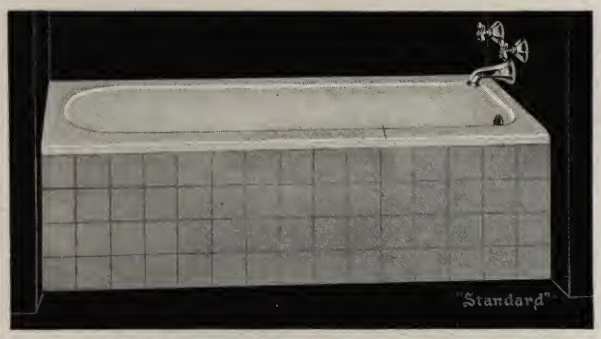
Fittings, all-metal combination built-in bath supply and drain, with over rim supply spout, two ½-inch built-in compression valves with renewable units, cross handles, and escutcheons, and 1½-inch connected drain and overflow with bead chain and rubber stopper.

Exposed metal chromium plated.

Nominal Size	inches	48
Length Over All	inches	48
Length from Finished Wall Lines	inches	46½
Width Over All	inches	29
Width from Finished Wall Line	inches	28¼
Depth Inside	inches	17
Height from Floor	inches	17½
Height Over All	inches	18
Width of Rim	inches	3
Approximate Shipping Weight, less Fittings	pounds	295

Enclosing material for Recwald Bath not furnished.

Furnished in regular white enamel only.



No. P-2454-NR, with Right or Left Outlet

Adapto Enameled Cast Iron Recess Bath to build into recess, with outlet in end wall.

Fittings, all-metal combination built-in bath supply and drain, with over rim supply spout, two ½-inch built-in compression valves with renewable units, cross handles, and escutcheons, and 1½-inch connected drain and overflow with bead chain and rubber stopper.

Exposed metal chromium plated.

Nominal Size	feet	4½	5	5½	6
Length Over All	in.	55	61	67	73
Length from Fin. Wall Lines	in.	52	58	64	70
Width Over All	in.	30½	30½	30½	30½
Width from Fin. Wall Line	in.	29	29	29	29
Depth Inside	in.	17	17	17	17
Height from Floor	in.	17½	17½	17½	17½
Height Over All	in.	18	18	18	18
Width of Rim	in.	3½	3½	3½	3½
Approximate Shipping Weight, less Fittings	lb.	295	305	345	380

Enclosing material for Adapto Baths not furnished.

Furnished in regular white and acid-resisting white or colored enamel.

As a
L-I-F-E-T-I-M-E
investment specify

"Standard" PLUMBING FIXTURES

The public is cordially invited to visit our showroom and see these fixtures on display. We will be pleased to offer our friendly assistance in your selection.

No. P-2135 Tub Supports
For Attaching to Studding

Devised to facilitate the setting of built-in baths. Can be used to support any type of built-in bath.

Cast iron construction, with the adjusting and locking nuts easily accessible above rim of tub. Readily attached to the studding by means of four heavy wood screws. Adjustable feature permits tub to be leveled after it has been placed on the supports.

Most cracks or openings which appear between tub and wall are due to shrinking of the joists. These tub supports reduce any possibility of an opening appearing at that point to a minimum.

No. P-2135 ..... each .....

No. P-2465-D, Right Corner
No. P-2464-D, Left Corner

Conred Enameled Cast Iron Bath to build into corner, with outlet at exposed end. Enameled inside only, painted outside.

Fittings, all-metal combination exposed bath supply and drain, compression valves have renewable units, cross handles, supply pipes, and escutcheons, and pop-up lift drain and overflow with 1½-inch outlet connection for either O.D. tubing or I.P. thread.

Exposed metal chromium plated.

Nominal Sizes	feet	4½	5	5½
Length Overall	inches	54½	60½	66½
Width Overall	inches	29	29	29
Depth Inside	inches	17	17	17
Height from Floor	inches	17¼	17¼	17¼
Height Overall	inches	17¾	17¾	17¾
Width of Rim	inches	3	3	3
Approx. Ship. Wt., less Ftgs.	pounds	327	347	388

Furnished in regular white and acid-resisting white enamel.

No. P-2471-NR, Right Corner
No. P-2470-NR, Left Corner

Conred Enameled Cast Iron Bath to build into corner, with outlet at built-in end. Enameled inside only, painted outside.

Fittings, all-metal combination built-in bath supply and drain, with over rim supply spout, two ½-inch built-in compression valves with renewable units, cross handles, and escutcheons, and 1½-inch connected drain and overflow with bead chain and rubber stopper.

Exposed metal chromium plated.

Nominal Sizes	feet	4½	5	5½
Length Overall	inches	54½	60½	66½
Width Overall	inches	29	29	29
Depth Inside	inches	17	17	17
Height from Floor	inches	17¼	17¼	17¼
Height Overall	inches	17¾	17¾	17¾
Width of Rim	inches	3	3	3
Approx. Ship. Wt., less Ftgs.	pounds	327	347	388

Furnished in regular white and acid-resisting white enamel.

No. P-**2474**-D, same as No. P-**2470**-NR except with bath faucet.

No. P-**2475**-D, same as No. P-**2471**-NR except with bath faucet.

No. P-2470-M, for Left Corner
No. P-2471-M, for Right Corner

Conred Enameled Cast Iron Corner Bath to build into left corner, with left end outlet.

Fittings, all-metal combination built-in shower and bath fitting with over-rim supply spout, four ½-inch built-in compression valves for bath and shower, renewable units, cross handles, and escutcheons, adjustable shower head with ball joint and bent supply arm, 1½-inch connected drain and overflow with bead chain and rubber stopper, curtain rod, holdback hook, and chain.

Exposed metal chromium plated.

Nominal Size	feet	4½	5	5½
Length Over All	inches	54½	60½	66½
Length from Finished Wall Line	inches	54	60	66
Width Over All	inches	29	29	29
Width from Finished Wall Line	inches	28½	28½	28½
Depth Inside	inches	17	17	17
Height from Floor	inches	17¼	17¼	17¼
Height Over All	inches	17¾	17¾	17¾
Width of Rim	inches	3	3	3
Approximate Shipping Weight, Less Fittings	pounds	320	350	400

Furnished in regular white enamel only.

Curtain and pins not furnished.

No. P-2481-AK, Left Outlet and Pop-Up Drain
No. P-2480-AK, Right Outlet and Pop-Up Drain
No. P-2481-AI, Left Outlet and Drain with Rubber Stopper
No. P-2480-AI, Right Outlet and Drain with Rubber Stopper

Recona Enameled Cast Iron Built-I Recess Bath with left outlet.

Fittings, all-metal combination built-in shower and bath fitting with over-rim supply spout, with integral diverter valve to shower, two ½-inch compression valves for bath, with renewable units, cross handles and escutcheons, adjustable shower head with ball joint, bent supply arm, and escutcheon, 1½-inch pop-up drain with lever handle operating through overflow, curtain rod, curtain, pins, holdback hook, and chain.

Exposed metal chromium-plated.

Nominal Sizes.....feet	4½	5	5½
Length Overall.....inches	53½	59½	65½
Length Between Finished Wall Lines .....inches	52½	58½	64½
Width Overall.....inches	29	29	29
Width from Finished Wall Line .....inches	28½	28½	28½
Depth Inside.....inches	17	17	17
Height from Floor.....inches	17¼	17¼	17¼
Height Overall.....inches	17¾	17¾	17¾
Width of Rim.....inches	3	3	3
Approximate Shipping Weight, Less Fittings.....pounds	320	350	400

Furnished in regular white enamel only.

No. P-2481-I, Left Outlet
No. P-2480-I, Right Outlet

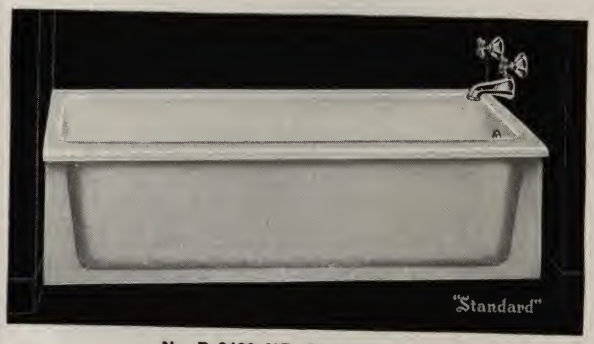
Recona Enameled Cast Iron Built-In Recess Bath with left outlet.

Fittings, all-metal combination built-in shower and bath fitting with over-rim supply spout, ½-inch transfer valve for shower, two ½-inch compression valves for bath, with renewable units, cross handles, and escutcheons, adjustable shower head with ball joint, bent supply arm, and escutcheon, 1½-inch connected drain and overflow with bead chain and rubber stopper, curtain rod, curtain, pins, holdback hook, and chain.

Exposed metal chromium-plated.

Nominal Sizes.....feet	4½	5	5½
Length Over All.....inches	53½	59½	65½
Length between Finished Wall Lines.....inches	52½	58½	64½
Width Over All.....inches	29	29	29
Width from Finished Wall Line.....inches	28½	28½	28½
Depth Inside.....inches	17	17	17
Height from Floor.....inches	17¼	17¼	17¼
Height Over All.....inches	17¾	17¾	17¾
Width of Rim.....inches	3	3	3
Approximate Shipping Weight, Less Fittings.....pounds	320	350	400

Furnished in regular white enamel only.



No. P-2480-NR, Right Outlet
No. P-2481-NR, Left Outlet

Recona Enameled Cast Iron Bath to build into recess, with roll rim and end outlet.

Fittings, all-metal combination built-in bath supply and drain, with over rim supply spout; two ½-inch built-in compression valves with renewable units, cross handles, and escutcheons; 1½-inch connected drain and overflow with bead chain and rubber stopper.

Exposed metal chromium plated.

Nominal Size	feet	4½	5	5½
Length Overall	inches	53½	59½	65½
Lgth. Between Finished Wall Lines	in.	52½	58½	64½
Width Overall	inches	29	29	29
Depth Inside	inches	17	17	17
Height from Floor	inches	17¼	17¼	17¼
Height Overall	inches	17¾	17¾	17¾
Width of Rim	inches	3	3	3
Approx. Ship. Wt., less Fittings	lb.	323	342	383

Regular white and acid-resisting white or colored enamel.

No. P-2500-D, on Legs
*No. P-2501-D, on Base

Essex Enameled Cast Iron Bath with roll rim. Supported on claw feet.

Fittings, compression double bath faucet with 4-arm metal indexed handles and 1½-inch connected drain and overflow with chain and rubber stopper.

Supply pipes, ½-inch I.P. size to floor with ball joint couplings and metal floor escutcheons.

Fittings furnished chromium-plated.

Nominal Size	feet	4	4½	5	5½	6
Length Over All	inches	48¼	54¼	60¼	66¼	72¼
Width Over All	inches	30	30	30	30	30
Depth Inside	inches	17	17	17	17	17
Height to Top of Rim	inches	22½	22½	22½	22½	22½
Width of Roll Rim	inches	3	3	3	3	3
Approx. Ship. Wt., Bath on Legs, Less Fittings	pounds	215	235	267	310	360
Approx. Ship. Wt., Bath on Base, Less Fittings	pounds	...	300	335	385	...

Regularly furnished enameled inside only, painted outside.

*Not furnished in 4 or 6-foot sizes.

Furnished in regular white enamel only.

No. P-2482-D, Right Outlet
No. P-2483-D, Left Outlet

Recona Enameled Cast Iron Bath to build into recess, with roll rim and end outlet.

Fittings, all-metal combination bath faucet with renewable units, cross handles, and escutcheons; 1½-inch connected drain and overflow with bead chain and rubber stopper.

Exposed metal chromium plated.

Nominal Size	feet	4½	5	5½
Length Overall	inches	53½	59½	65½
Lgth. Between Finished Wall Lines	in.	52½	58½	64½
Width Overall	inches	29	29	29
Depth Inside	inches	17	17	17
Height from Floor	inches	17¼	17¼	17¼
Height Overall	inches	17¾	17¾	17¾
Width of Rim	inches	3	3	3
Approx. Ship. Wt., less Fittings	lb.	323	342	383

Furnished in regular white and acid-resisting white enamel.

No. P-2505-D

Knickerbocker Enameled Cast Iron Bath with roll rim. Supported on claw feet.

Fittings, compression double bath faucet with 4-arm metal indexed handles and 1½-inch connected drain and overflow with chain and rubber stopper.

Supply pipes, ½-inch I.P. size to floor with ball joint couplings and metal floor escutcheons.

Fittings furnished chromium-plated.

Nominal Size	feet	4	4½	5	5½
Length Over All	inches	48	54	60	66
Width Over All	inches	26	26	26	26
Depth Inside	inches	17	17	17	17
Height to Top of Rim	inches	22½	22½	22½	22½
Width of Roll Rim	inches	2¼	2¼	2¼	2¼
Approx. Shipping Weight, Less Fittings	pounds	220	240	265	305

Regularly furnished enameled inside only, painted outside.

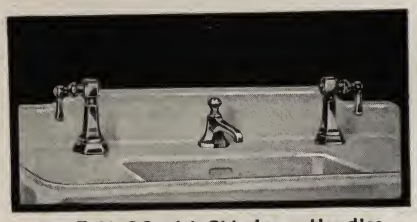
Furnished in regular white enamel only.

Pemberton Vitreous China Lavatories

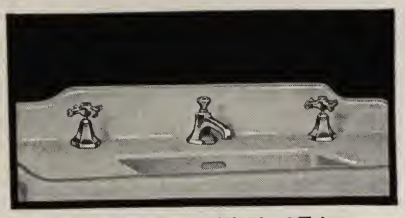
A fixture that is really a lavatory and dressing table in one. The large top provides ample room for toilet accessories or shaving articles. The bowl is square and extra large and there is plenty of room underneath for a dressing bench to be drawn close.

This fixture may be obtained in a variety of pure colors with several distinctive varieties of trim.

No. F-61-GK with High Body Hexagonal Trim



No. F-61-GQ with Side Lever Handles



No. F-61-G with Waldorf Trim

Vitreous china lavatory with back, rear outlet, square bowl, and open overflow. Supported on two metal legs and wall hangers.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, cross handles, raised spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons. Trap, 1½-inch P pattern with metal wall flange.

Exposed metal chromium plated.

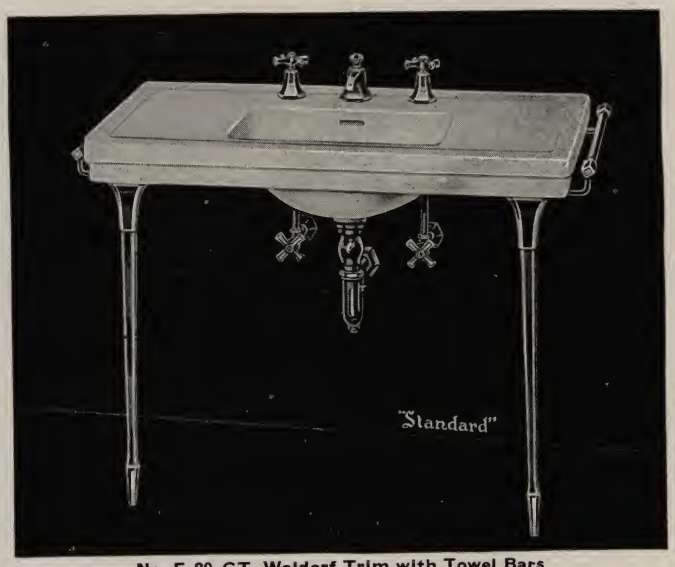
Nominal Sizes	inches	30x21¼	36x21¼
Bowl	inches	17x12¼	17x12½
Height from Floor	inches	31	31
Approximate Shipping Weight less Fittings	pounds	170	200

Chesterton Vitreous China Lavatory

A fixture that is really a lavatory and dressing table in one. The large top provides ample room for toilet accessories or shaving articles. The bowl is square and extra large and there is plenty of room underneath for a dressing bench to be drawn close.

The fittings shown at left are hexagonal design. Fittings shown below are round design.

This fixture may be obtained in a variety of pure colors with several distinctive varieties of trim.



No. F-80-GT, Waldorf Trim with Towel Bars
No. F-80-G, Waldorf Trim less Towel Bars
(Illustrating 42-Inch Size)

No. F-80-GT, Colonial Trim with Towel Bars
No. F-80-G, Colonial Trim less Towel Bars
(Illustrating Smaller Size)

Vitreous china lavatory with square bowl, anti-splash rim, rear outlet, and open overflow. Supported on metal wall brackets and metal legs with towel bars.

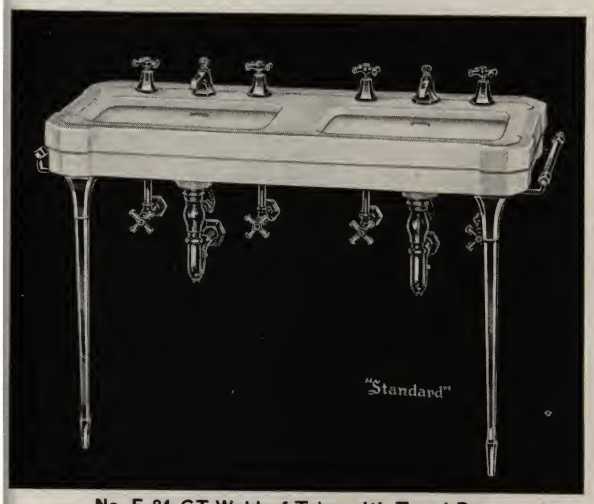
Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, cross handles, raised spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1½-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	27x22	30x24	36x22	42x22
Bowl	inches	19x13½	19x13½	19x13½	19x13½
Height from Floor	inches	31	31	31	31
Approx. Ship. Weight, less Fittings	pounds	117	140	170	185



No. F-84-GT Waldorf Trim with Towel Bars
No. F-84-G Waldorf Trim less Towel Bars

Broadmore Vitreous China Double Lavatory with two square bowls, anti-splash rim, rear outlet, and open overflow. Supported on metal wall brackets and metal legs with towel bars.

Fittings, two all-metal combination supply and pop-up drain fittings with compression valves, renewable units, cross handles, raised spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops.

Exposed metal chromium plated.

Traps, 1¼-inch P pattern with metal wall flange.

Nominal Size	inches	47½x22¾
Bowls	inches	18x13
Height from Floor	inches	31
Approximate Shipping Weight	pounds	200

Furnished in white or colors.

No. F-112-S

Strate-Line Vitreous China Lavatory with square bowl, anti-splash rim, rear outlet, and open overflow. Supported on metal wall brackets and metal legs with towel bars.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, cross handles, raised spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium-plated.

Nominal Size	inches	24x20
Bowl	inches	16x12
Height from Floor	inches	31
Approx. Shipping Weight, less Fittings	pounds	95

Furnished in white or colors.

No. F-111-GT, Neo-Classic Trim with Towel Bars
No. F-111-G, Neo-Classic Trim less Towel Bars

Neolyn Vitreous China Lavatory with square bowl, anti-splash rim, rear outlet, and open overflow. Supported on metal wall brackets and metal legs with towel bars.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, round handles, raised spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, round metal handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	24x20	27x22	30x24
Bowl	16¼x11¼	18¼x12¼	19¾x13¼
Height from Floor	31	31	31
Approx. Shipping Weight, less Fittings	95	105	125

Furnished in white or colors.

No. F-113-G, Waldorf Trim

Marlton Vitreous China Lavatory with back, integral spout, square bowl, rear outlet, and open overflow. Supported on concealed wall hangers and metal legs.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, cross handles, and drain lever.

Supply pipes, ⅜-inch I.P. size to wall, with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	26x14¾
Bowl	inches	17¼x10¼
Height from Floor	inches	31
Approximate Ship. Wt., less Fittings	pounds	105

Furnished in white or colors.

No. F-114-S

Marlton Vitreous China Lavatory with back, integral spout, square bowl, rear outlet, and open overflow. Supported on concealed wall hangers.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, cross handles, and drain lever.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	26x14¾
Bowl	inches	17¼x10¼
Approx. Ship. Wt., less Fittings	pounds	86

Furnished in white or colors.

No. F-115-GT, Waldorf Trim, with Towel Bars
No. F-115-G, Waldorf Trim, less Towel Bars

Companion Vitreous China Lavatory with shelf back, integral spout, square bowl, anti-splash rim, rear outlet, open overflow, and two cast-in soap dishes. Supported on concealed wall hanger and metal legs with towel bars.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, cross handles, and drain lever.

Supply pipes, ⅜-inch I.P. size to wall with angle stops.

Trap, 1¼-inch P pattern with metal wall flange.

Nominal Size	inches	22x18	26x22
Bowl	inches	15¼x11½	17¼x14
Width of Shelf at Ends	inches	5	5
Height of Back	inches	5	5
Height from Floor	inches	31	31
Approx. Ship. Wt. less Ftgs	pounds	90	125

No. F-115-S

Companion Vitreous China Lavatory with shelf back, integral spout, square bowl, anti-splash rim, rear outlet, open overflow, and two cast-in soap dishes. Supported on concealed wall hanger and metal legs.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, cross handles, and drain lever.

Supply pipes, ⅜-inch I.P. size to wall with angle stops.

Trap, 1¼-inch P pattern with metal wall flange.

Nominal Size	inches	22x18	26x22
Bowl	inches	15¼x11½	17¼x14
Width of Shelf at Ends	inches	5	5
Height of Back	inches	5	5
Height from Floor	inches	31	31
Approx. Ship. Wt., less Fittings	pounds	85	120

No. F-115-ST

Companion Vitreous China Lavatory with shelf back, integral spout, square bowl, anti-splash rim, rear outlet, open overflow, and two cast-in soap dishes. Supported on concealed wall hangers and metal legs with towel bars.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, cross handles, and drain lever.

Supply pipes, ⅜-inch I.P. size to wall with angle stops.

Trap, 1¼-inch P pattern with metal wall flange.

Nominal Size	inches	22x18	26x22
Bowl	inches	15¼x11½	17¼x14
Width of Shelf at Ends	inches	5	5
Height of Back	inches	5	5
Height from Floor	inches	31	31
Approximate Shipping Weight, less Fittings	pounds	90	125

Furnished in white or colors.

No. F-116-S

Companion Vitreous China Lavatory with shelf back, integral spout, square bowl, anti-splash rim, rear outlet, open overflow, and two cast-in soap dishes. Supported on concealed wall hanger.

Fittings, all-metal combination supply and pop-up drain fitting, compression valves, renewable units, cross handles, and drain lever.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	22x18
Bowl	inches	15¼x11½
Width of Shelf at Ends	inches	5
Height of Back	inches	5
Approximate Shipping Weight, less Fittings	pounds	75

Furnished in white or colors.

No. F-147-ST, with Towel Bars
No. F-147-S, less Towel Bars

Braxton Vitreous China Lavatory with square bowl, anti-splash rim, rear outlet, and open overflow. Supported on metal wall brackets and metal legs with towel bars.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, cross handles, raised spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Nominal Size	inches	24x20	27x22	30x24
Bowl	inches	16¾x12	18¾x13½	19½x13½
Height from Floor	inches	31	31	31
Approx. Ship. Wt., less Fittings	pounds	135	150	170

The 24x20-inch size has cast-in soap dish.

No. F-125-MT, with Pop-Up Drain
No. F-125-HT, with Plug and Chain

Comrade Vitreous China Lavatory with shelf back, square bowl, anti-splash rim, rear outlet, open overflow, and two cast-in soap dishes. Supported on concealed wall hanger and metal legs with towel bars.

Fittings, all-metal combination supply and pop-up drain fitting with quick compression valves, renewable units, lever handles, raised spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Nominal Size	inches	20x18	24x20
Bowl	inches	14x11¼	17x12¾
Width of Shelf	inches	4¼	4½
Height from Floor	inches	31	31
Approx. Ship. Wt., less Fittings	pounds	103	128

Furnished in white or colors.

No. F-157-S

Blackford Vitreous China Lavatory with square bowl, anti-splash rim, rear outlet, and open overflow. Supported on metal wall brackets and vitreous china pedestal.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, cross handles, raised spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	in.	20x18	24x20	27x22	30x24
Bowl	in.	14x10¾	16¾x12	18¾x13½	19½x13½
Height from Floor	in.	31	31	31	31
Approx. Ship. Wt. less Fittings	lb.	85	101	115	145

The 20x18 and 24x20-inch sizes have cast-in soap dishes.

Furnished in white or colors.

No. F-167-ST, with Towel Bars
No. F-167-S, less Towel Bars

Roxbury Vitreous China Lavatory with square bowl, anti-splash rim, rear outlet, and open overflow. Supported on metal wall brackets and metal legs with towel bars.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, cross handles, raised spout, and drain knob.

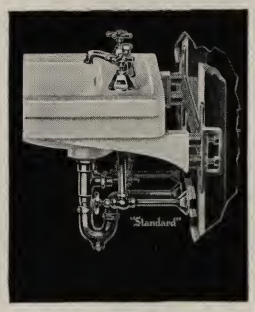
Supply pipes, ⅜-inch I.P. Thread size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Nominal Size..in.	*20x18	*24x20	27x22	30x24
Bowl.....in.	14x10¾	16¾x12	18¾x13½	19½x13½
Ht. from Floor in.	31	31	31	31
Approx. Ship. Wt. lessFittings.lbs.	54	67	80	102

Furnished in white or colors.
*Has cast-in soap dish.

Standard Lavatory Supports



No. 13

The lavatory supports shown here have been designed to satisfy requirements for a practical and safe installation of the heavier vitreous china lavatories with no floor obstruction.

The strength of this bracket is greater than any strain likely to be placed upon it.

The concealed anchor fastens with many screws to studding and cross piece. The latter should be provided.

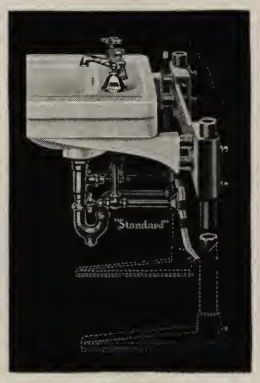
The anchor may also be fastened to masonry or hollow tile by use of expansion bolts or toggle bolts.

Ample adjustment is provided for varying wall thicknesses or finishes by a set of four bolts and wall spacers, which rigidly support brackets and transmit weight of lavatory directly to a concealed anchor.

Distance from floor is optional.

The same type of support can be furnished with a chair carrier with cast feet to set on floor and connected to the support by pipe uprights.

Concealed supports should be ordered shipped to the job immediately to permit installation before the walls can be finished by tile setters or plasterers.



No. 12

No. F-257-S

Hibben Vitreous China Lavatory with square bowl, anti-splash rim, rear outlet, open overflow, and cast-in soap dish. Supported on vitreous china leg and metal wall brackets.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, cross handles, raised spout, and drain knob.

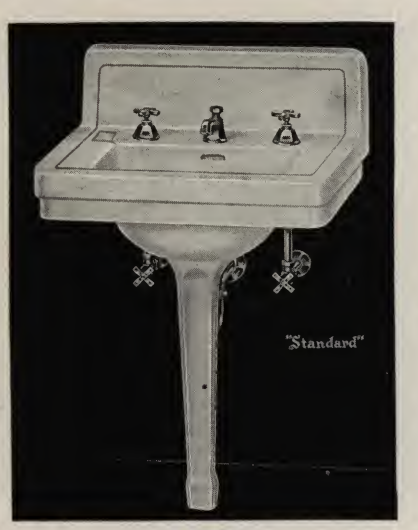
Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Sizes.....inches	20x18	24x20	*27x22
Bowl.....inches	14x10¾	16¾x12	18¾x13½
Height from Floor....inches	31	31	31
Approx. Ship. Wt. less Ftgs. .....lbs.	62	75	100

*The 27x22-inch size does not have cast-in soap dish.
Furnished in white or colors.



No. F-267-S

Randall Vitreous China Lavatory with back, square bowl, anti-splash rim, rear outlet, open overflow, and cast-in soap dish. Supported on vitreous china leg and concealed wall hangers.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, cross handles, raised spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops.

Trap, 1¼-inch P pattern with metal wall flange.

In white or colors. Exposed metal chromium plated.

Nominal Size.....inches	20x18	24x20
Bowl.....inches	14x10½	16¾x11¾
Height of Back.....inches	6	7
Height from Floor.....inches	31	31
Approx. Ship. Wt., less Fittings.pounds	73	97

No. F-305-ST, with Towel Bars
No. F-305-S, less Towel Bars

Marledge Vitreous China Lavatory with shelf back, square bowl, anti-splash rim, rear outlet, open overflow, and two cast-in soap dishes. Supported on concealed wall hangers.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable seats, cross handles, spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	20x14	26x14
Bowl	inches	14x 9	17¼x9
Width of Shelf	inches	4	4
Height of Back	inches	5	5
Approx. Ship. Wt., less Ftgs	pounds	59	65

Furnished in white or colors.

No. F-357-S

Buena Vitreous China Lavatory with square bowl, anti-splash rim, rear outlet and open overflow. Supported on concealed support and enameled wall brackets.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, cross handles, raised spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Sizes..inches	*20x18	*24x20	27x22	30x24
Bowl.....inches	14x10¾	16¾x12	18¾x13½	19½x13½
Height from Floor.in.	31	31	31	31
Approx. Ship. Weight Less Fittings...lbs.	75	90	130	180

*These sizes have cast-in soap dish.

Furnished in white or colors.

No. F-306-S

Marledge Vitreous China Lavatory with shelf back, square bowl, rear outlet, open overflow, and two cast-in soap dishes. Supported on concealed wall hangers.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable seats, cross handles, spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Nominal Size	inches	20x14	26x14
Bowl	inches	14x 9	17¼x9
Width of Shelf	inches	4	4
Height of Back	inches	5	5
Approximate Shipping Weight, less Fittings	pounds	59	65

Furnished in white or colors.

No. F-370-WZ

Penhurst Vitreous China Lavatory with back, oval bowl, anti-splash rim, rear outlet, open overflow, and cast-in soap dish. Supported on concealed wall hanger.

Fittings, quick compression faucets with metal lever handles, chain stay, drain plug, bead chain, and rubber stopper.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	18x15
Bowl	inches	15x9
Height of Back	inches	6
Approximate Shipping Weight, less Fittings	pounds	50

Furnished in white or colors.

No. F-367-WZ

Lucerne Vitreous China Lavatory with back, square bowl, anti-splash rim, rear outlet, open overflow, and cast-in soap dish. Supported on concealed wall hanger.

Fittings, quick compression faucets with metal lever handles, chain stay, drain plug, bead chain, and rubber stopper.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nonimal Size	inches	20x18	24x20
Bowl	inches	14x10½	16¾x11¾
Height of Back	inches	6	7
Approx. Ship. Wt., less Fittings	pounds	58	86

Furnished in white or colors.

No. F-369-M, with Pop-Up Drain
No. F-369-H, with Plug and Chain

Lucerne Vitreous China Lavatory with back, square bowl, anti-splash rim, rear outlet, open overflow, and cast-in soap dish. Supported on concealed wall hanger.

Fittings, all-metal combination supply and pop-up drain fitting with quick compression valves, renewable units, lever handles, raised spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	20x18	24x20
Bowl	inches	14x10½	16¾x11¾
Height of Back	inches	6	7
Approx. Ship. Wt., less Fittings	pounds	58	86

Furnished in white or colors.

No. F-367-S

Lucerne Vitreous China Lavatory with back, square bowl, anti-splash rim, rear outlet, open overflow, and cast-in soap dish. Supported on concealed wall hangers.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, cross handles, raised spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	20x18	24x20
Bowl	inches	14x10½	16¾x11¾
Height of Back	inches	6	7
Approx. Ship. Wt., less Fittings	pounds	58	86

Furnished in white or colors.

No. F-387-WZ

Fenwick Vitreous China Corner Lavatory with back, rear outlet, oval bowl, and open overflow. Supported on concealed wall hangers.

Fittings, compression faucets with metal lever handles, chain stay, drain plug, bead chain, and rubber stopper.

Supply pipes, ⅜-inch I. P. size to wall with escutcheons.

Trap, 1¼-inch bag pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	17x17
Bowl	inches	14½x10½
Height of Back	inches	6
Approx. Shipping Weight, less Fittings	pounds	69

Furnished in white or colors.

No. F-398-VIR

Hood Vitreous China Lavatory with back, oval bowl, anti-splash rim, rear outlet, open overflow, and cast-in soap dish. Supported on concealed wall hanger.

Fittings, compression faucets with metal cross handles, chain stay, drain plug, bead chain, and rubber stopper.

Supply pipes, not illustrated but furnished.

Trap can be furnished.

Nominal Size	inches	18x15
Bowl	inches	15x9¼
Height of Back	inches	2¼
Approximate Shipping Weight, less Fittings	pounds	30

Furnished in white only.

No. F-399-VIH

Hood Vitreous China Lavatory with back, oval bowl, anti-splash rim, rear outlet, open overflow and cast-in soap dish. Supported on concealed wall hanger.

Fittings, all-metal combination supply fitting with quick compression valves, lever handles, raised spout, drain plug, bead chain, and rubber stopper.

Supply pipes, not illustrated but furnished.

Trap can be furnished.

Nominal Size	inches	18x15
Bowl	inches	15x9¼
Height of Back	inches	2¼
Approximate Shipping Weight, less Fittings	pounds	30

Furnished in white only.

No. F-420

Prison Vitreous China Lavatory with back, integral supply spout with drinking nozzle, and integral soap dish over open overflow. Supported on concealed wall hanger.

Fittings, all-metal concealed supply fitting with self-closing push button valves for hot and cold water and integral slow draining outlet with 1¼-inch concealed drain connection through rear.

Supply connections regularly furnished for walls not exceeding 1 inch in thickness. Can be furnished for other wall thicknesses when specified.

Trap not furnished. Provision must be made for trap behind wall.

Exposed metal chromium-plated.

Length	inches	14
Width	inches	12¾
Height of Back	inches	4¾
Approximate Shipping Weight Less Fittings	pounds	43

Furnished in white only.

Available with 1½-inch drain connection when specified.

No. F-442, Fittings on Left
No. F-424, Fittings on Right

Prison Vitreous China Corner Lavatory with back, integral supply spout with drinking nozzle, and integral soap dish over open overflow. Supported on concealed wall hanger.

Fittings, all-metal concealed supply fitting with self-closing push button valves for hot and cold water. Integral slow draining outlet with 1¼-inch concealed drain connector through rear.

Supply connections regularly furnished for walls not exceeding 1 inch in thickness. Can be furnished for other wall thicknesses when specified.

Trap not furnished. Provision must be made for trap behind wall.

Exposed metal chromium-plated.

Length on Sides	inches	14
Height of Back	inches	4¾
Approximate Shipping Weight Less Fittings	pounds	62

Available with 1½-inch drain connection when specified.

No. F-447-WZ, Three Double Sections

Battery of Landore Vitreous China Lavatories with square bowl, rear outlet, open overflow, and cast-in soap dish. On painted supports to floor.

Fittings, compression faucets with metal lever handles, chain stays, drain plugs, bead chains, and rubber stoppers.

Supply pipes and traps not furnished.

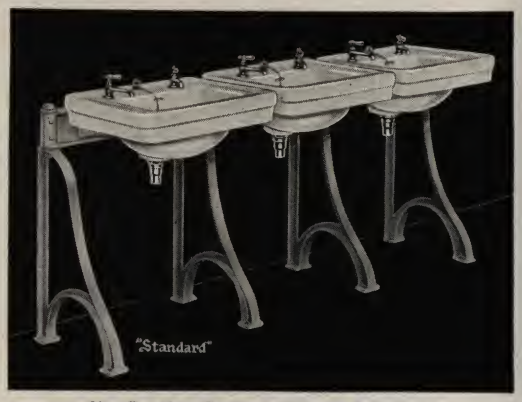
Exposed brass chromium-plated.

		No. F-447-WZ	No. F-442-WZ
Nominal Size	inches	20x18	24x20
Bowl	inches	14x11	16¾x12
Length Over All, Three Sections	inches	75	87
Width, Double Section	inches	38	42
Width, Single Section	inches	20	22
Height from Floor	inches	31	31
Approx. Ship. Wt. One Double Section	pounds	177	230
Approx. Ship. Wt. Each Additional Dbl. Sec.	pounds	160	210
Approximate Shipping Weight One Single Section	pounds	106	140
Approx. Ship. Wt. Each Additional Sgl. Sec.	pounds	80	105

Double sections can be furnished with vent pipe supports when specified.

Single sections can be furnished with vent pipe supports if set clear of the wall.

Furnished in white only.



No. F-442-WZ, Three Single Sections

No. F-450-WZ

Agwi Vitreous China Corner Lavatory with back, round bowl, center outlet, and open overflow. Supported on wall screws.

Fittings, quick compression faucets with metal lever handles, chain stay, drain plug, bead chain, and rubber stopper.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	12½x12½	14x14
Bowl	inches	9½	10
Height of Back	inches	2¼	2¼
Approx. Ship. Wt., less Fittings	pounds	28	33

Furnished in white or colors.

No. F-455-WZ

Amida Vitreous China Lavatory with back, round bowl, center outlet, and open overflow. Supported on wall screws.

Fittings, quick compression faucets with metal lever handles, chain stay, drain plug, bead chain, and rubber stopper.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	14x14
Bowl	inches	10
Height of Back	inches	2¼
Approximate Shipping Weight, less Fittings	pounds	36

Furnished in white or colors.

No. F-457-WZ

Althea Vitreous China Lavatory with back, round bowl, center outlet, and open overflow. Supported on wall screws.

Fittings, quick compression faucets with metal lever handles, chain stay, drain plug, bead chain, and rubber stopper.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	12½x12½
Bowl	inches	9½
Height of Back	inches	2¼
Approx. Ship. Wt., less Fittings	pounds	28

Furnished in white or colors.

No. F-575

Denlava Vitreous China Dental Lavatory with shelf back, integral nozzle, round bowl, flushing rim, strainer, and trap with cleanout. Supported on concealed wall hanger.

Fittings, all-metal supply fittings to integral nozzle and flushing rim, with compression valves, renewable units, cross handles, and built-in vacuum breaker.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap outlet connection, 1½-inch inside I.P. size thread.

Exposed metal chromium plated.

Nominal Size	inches	16x15¾
Height of Back	inches	6
Width of Shelf	inches	4
Approximate Shipping Weight, less Fittings	pounds	68

Furnished in white or colors.

No. F-571

Madenta Vitreous China Dental Lavatory with back, integral supply nozzle, square bowl, and integral china strainer. Supported on concealed wall hanger.

Fittings, all-metal supply to integral nozzle with compression valves, renewable units, cross handles, and escutcheons.

Supply pipes, ⅜-inch I. P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	13x14
Height of Back	inches	5
Approx. Shipping Weight, less Fittings	pounds	42

Furnished in white or colors.

No. F-598-S

Madadore Vitreous China Manicuring Table with round bowl. Supported on metal wall brackets and vitreous china leg.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, cross handles, gooseneck spout, and drain knob.

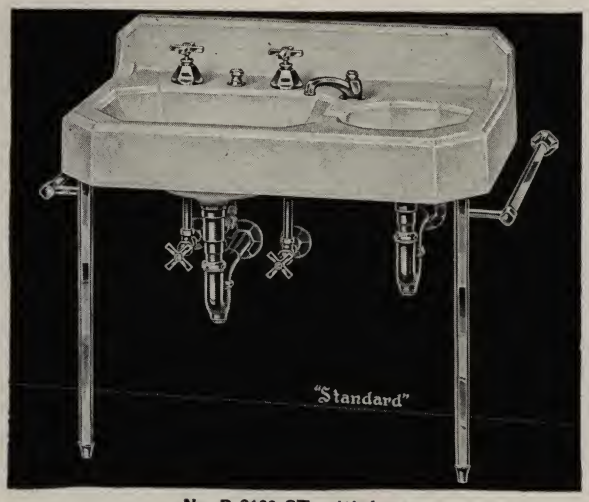
Supply pipes, ⅜-inch I.P. thread to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium-plated.

Nominal Size	inches	32x18
Diameter of Bowl	inches	6¾
Height from Floor	inches	31
Approximate Shipping Weight	pounds	100

Furnished in white or colors.



No. P-3100-ST, with Legs
No. P-3105-S, without Legs

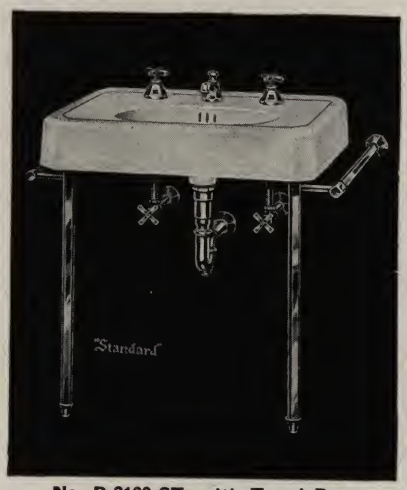
Denton Enameled Cast Iron Combination Lavatory and Dental Fixture with back, octagonal design lavatory bowl and octagonal design dental bowl with center outlets. Supported on wall hangers and metal legs with towel bars.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, cross handles, swinging spout, and drain knob. Drain plug with beehive strainer in dental basin.

Supply pipes, ⅜-inch I.P. size to wall with angle stops.

Traps, two, 1¼-inch P pattern with metal wall flanges.

Nominal Size	inches	31¼x19¼
Lavatory Bowl	inches	16x11
Diameter Dental Bowl	inches	9
Height of Back	inches	4
Approx. Ship. Wt., Complete	pounds	135



No. P-3122-ST, with Towel Bars
No. P-3122-S, less Towel Bars

Cliff Enameled Cast Iron Lavatory with oval bowl, rear outlet, and integral overflow. Supported on painted wall brackets and metal legs with flanged towel bars.

Fittings, all-metal combination supply and pop-up drain fitting, compression valves, renewable units, cross handles, raised spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium-plated.

Nominal Size	inches	24x20	27x22
Bowl	inches	16x12	16x12
Height from Floor	inches	31	31
Approx. Ship. Wt., less Fittings	pounds	120	145

Regular white and acid-resisting white or colored enamel.

No. P-3127-S

Clyde Enameled Cast Iron Lavatory with oval bowl, rear outlet, and integral overflow. Supported on enameled pedestal.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, cross handles, raised spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal wheel handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	24x20	27x22
Bowl	inches	16x12	16x12
Height from Floor	inches	31	31
Approx. Ship. Wt., less Fittings	pounds	165	190

Regular white and acid-resisting white or colored enamel.

No. P-3139-MC

Clynett Enameled Cast Iron Lavatory with oval bowl, rear outlet, and integral overflow. Supported on cabinet.

Fittings, all-metal combination supply and pop-up drain fitting with quick compression valves, renewable units, lever handles, raised spout, and drain knob.

Supply pipes, ⅜-inch I. P. size to wall with angle stops.

Trap, 1¼-inch P pattern with metal wall flange.

Cabinet, steel, baked gloss finish with black painted base, double door, one shelf, shield to conceal drain fitting and trap, and closed bottom.

Nominal Size	inches	24x20
Bowl	inches	16x12
Height from Floor	inches	32
Approximate Shipping Weight, less Fittings	pounds	155

Cabinet furnished green, ivory, white, or primed only.

No. P-3149-MC, with No. 213 Cabinet
No. P-3159-M, with Brackets, less Cabinet

Daltonett Enameled Cast Iron Lavatory with oval bowl, rear outlet, and integral overflow. Supported on cabinet.

Fittings, all-metal combination supply and pop-up drain fitting with quick compression valves, renewable units, lever handles, raised spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops.

Trap, 1¼-inch P pattern with metal wall flange.

Cabinet, steel, baked gloss finish with black painted base.

Nominal Size	inches	24x18
Bowl	inches	16x10½
Height from Floor	inches	32
Approx. Ship. Wt., with Cabinet	pounds	121

Furnished in regular white enamel only.

No. P-3867-U

Hexagon Enameled Cast Iron Lavatory with back, square bowl, rear outlet, and integral overflow. Supported on concealed wall hanger.

Fittings, all-metal combination supply and shampoo fitting, compression faucets and shampoo control stops with renewable units, metal handles, rose spray, rubber hose, and pop-up drain with metal knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	20x18	22x19
Bowl	inches	16x9½	18x10½
Height of Back	inches	6	6
Approx. Ship. Wt., less Fittings	pounds	81	93

Regular white and acid-resisting white or colored enamel.

No. P-3865-RZ

Hexagon Enameled Cast Iron Lavatory with back, square bowl, rear outlet, and integral overflow. Supported on concealed wall hanger.

Fittings, compression faucets with raised spouts and metal handles, chain stay, drain plug, bead chain, and rubber stopper.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	20x18	22x19
Bowl	inches	16x9½	18x10½
Height of Back	inches	6	6
Approx. Ship. Wt., less Fittings	pounds	78	87

Regular white and acid-resisting white or colored enamel.

No. P-3868-ST, with Towel Bars
No. P-3868-S, less Towel Bars

Hexagon Enameled Cast Iron Lavatory with back, square bowl, rear outlet, and integral overflow. Supported on concealed wall hanger and metal legs.

Fittings all-metal combination supply and pop-up drain fitting with compression valves, renewable units, cross handles, raised spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal wheel handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Nominal Size	inches	20x18	22x19
Bowl	inches	16x9½	18x10½
Height of Back	inches	6	6
Approx. Ship. Wt., less Fittings	pounds	88	100

Regular white and acid-resisting white or colored enamel.

No. P-3869-M

Hexagon Enameled Cast Iron Lavatory with back, square bowl, rear outlet, and integral overflow. Supported on concealed wall hanger.

Fittings, all-metal combination supply and pop-up drain fitting with quick compression valves, renewable units, lever handles, raised spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	20x18	22x19
Bowl	inches	16x9½	18x10½
Height of Back	inches	6	6
Approx. Ship. Wt., less Fittings	pounds	78	87

Regular white and acid-resisting white or colored enamel.

No. P-4100-S

Ledgewood Enameled Cast Iron Lavatory with shelf back, square bowl, rear outlet, and integral overflow. Supported on concealed wall hanger.

Fittings, all-metal combination supply and pop-up drain fitting through back with compression valves, renewable seats, cross handles, spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	19x17	22x19
Bowl	inches	15x10½	18x12½
Height of Back	inches	4	4
Width of Shelf	inches	4½	4½
Approximate Shpg. Wt., less Fittings	lb.	90	103

Regular white and acid-resisting white or colored enamel.

No. P-3869-MC, with No. 240 Cabinet

Hexagon Enameled Cast Iron Lavatory with back, square bowl, rear outlet, and integral overflow.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, lever handles, raised spout, and drain knob. Trap, 1¼-inch P pattern.

Supply pipes, ⅜-inch I.P. size to wall with angle stops.

Cabinet, steel baked gloss finish with black painted base, single door, one shelf, and closed bottom.

Nominal Size	inches	20x18
Bowl	inches	16x 9½
Height of Back	inches	6
Approx. Ship. Wt. Lavatory	pounds	87
Approx. Ship. Wt., Cabinet	pounds	45

Cabinet furnished green, ivory, white, or primed only.

No. P-4105-ST, with Towel Bars
No. P-4105-S, less Towel Bars

Ledgewood Enameled Cast Iron Lavatory with shelf back, square bowl, rear outlet, integral overflow, and cast-in soap dish. Supported on concealed wall hanger and metal legs with towel bars.

Fittings, all-metal combination supply and pop-up drain fitting through back with compression valves, renewable seats, cross handles, spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Nominal Size	inches	19x17	22x19
Bowl	inches	15x10½	18x12½
Height of Back	inches	4	4
Width of Shelf	inches	4½	4½
Approx. Ship. Wt., less Ftgs.	pounds	106	108

Regular white and acid-resisting white or colored enamel.

No. P-4205-RZ

Othello Enameled Cast Iron Lavatory with back, oval bowl, rear outlet, integral overflow, and cast-in soap dish. Supported on concealed wall hanger.

Fittings, compression faucets with metal cross handles, chain stay, drain plug, bead chain, and rubber stopper.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	19x17	21x18
Bowl	inches	15x10½	16½x10½
Height of Back	inches	6	7
Approx. Ship. Wt., less Fittings	pounds	73	83

Furnished in regular white and acid-resisting white enamel.

No. P-4207-R

Othello Enameled Cast Iron Lavatory with back, oval bowl, rear outlet, and integral overflow. Supported on concealed wall hanger.

Fittings, compression faucets with metal cross handles, and pop-up drain with metal knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	21x18
Bowl	inches	16½x10½
Height of Back	inches	7
Approximate Shipping Weight, less Fittings	lbs.	83

Furnished in regular white and acid-resisting white enamel.

No. P-4209-M

Othello Enameled Cast Iron Lavatory with back, oval bowl, rear outlet, and integral overflow. Supported on concealed wall hanger.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable units, lever handles, raised spout, and drain knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	21x18
Bowl	inches	16½x10½
Height of Back	inches	7
Approx. Ship. Wt., less Fittings	pounds	83

Furnished in regular white and acid-resisting white enamel.

No. P-4365-WZ

Alva Enameled Cast Iron Lavatory with back, round bowl, center outlet, and integral overflow. Supported on concealed wall hanger.

Fittings, quick compression faucets with metal lever handles, chain stay, drain plug, bead chain, and rubber stopper.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	14x16
Bowl	inches	11¼
Height of Back	inches	5
Front to Back	inches	16
Approx. Ship. Wt., less Fittings	pounds	45

Furnished in regular white enamel only.

No. P-4219-C

Marco Enameled Cast Iron Lavatory with back, oval bowl, center outlet, and integral overflow. Supported on concealed wall hanger.

Fittings, all-metal combination supply and drain fitting with compression valves, renewable units, cross handles, spout through back, drain plug, bead chain, and rubber stopper.

Supply pipes, ⅜-inch I. P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	26x14
Bowl	inches	16x10
Height of Back	inches	6
Approximate Shipping Weight, less Fittings	pounds	85

Regular white and acid-resisting white or colored enamel.

No. P-4219-W

Marco Enameled Cast Iron Lavatory with back, oval bowl, center outlet, and integral overflow. Supported on concealed wall hanger.

Fittings, compression faucets with metal lever handles, raised spouts, and pop-up drain with metal lever handle.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	26x14
Bowl	inches	16x10
Height of Back	inches	6
Approx. Ship. Wt., less Fittings	pounds	85

Regular white and acid-resisting white or colored enamel.

No. P-4335-RZ

Beverly Enameled Cast Iron Lavatory with back, oval bowl, rear outlet, integral overflow, and cast-in soap dish. Supported on concealed wall hanger.

Fittings, compression faucets with metal cross handles, chain stay, drain plug, bead chain, and rubber stopper.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	19x17	21x18
Bowl	inches	15x10½	16½x10½
Height of Back	inches	6	7
Approx. Ship. Wt., less Fittings	pounds	65	70

Furnished in regular white enamel only.

No. P-4337-W

Beverly Enameled Cast Iron Lavatory with back, oval bowl, rear outlet, integral overflow, and cast-in soap dish. Supported on concealed wall hanger.

Fittings, compression faucets with metal lever handles, and pop-up drain with metal knob.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	21x18
Bowl	inches	16½x10½
Height of Back	inches	7
Approximate Shipping Weight, less Fittings	pounds	70

Furnished in regular white enamel only.

No. P-4955-RZ

Anglo Enameled Cast Iron Lavatory with back, oval bowl, rear outlet, integral overflow, and cast-in soap dish. Supported on concealed wall hangers.

Fittings, compression faucets with raised spouts, and metal cross handles, chain stay, drain plug, bead chain, and rubber stopper.

Supply pipes, ⅜-inch I.P. size to wall with escutcheons.

Trap, 1¼-inch bag pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	16x16	19x19
Bowl	inches	15x10½	16½x10½
Height of Bowl	inches	5½	7¼
Approx. Ship. Wt., less Fittings	pounds	79	83

Regular white and acid-resisting white or colored enamel.

No. P-5085-RZ

Everett Enameled Cast Iron Corner Lavatory with back, roll rim, oval bowl, rear outlet, integral overflow, and cast-in soap dish. Supported on concealed wall hangers.

Fittings, compression faucets with metal cross handles, chain stay, drain plug, bead chain, and rubber stopper.

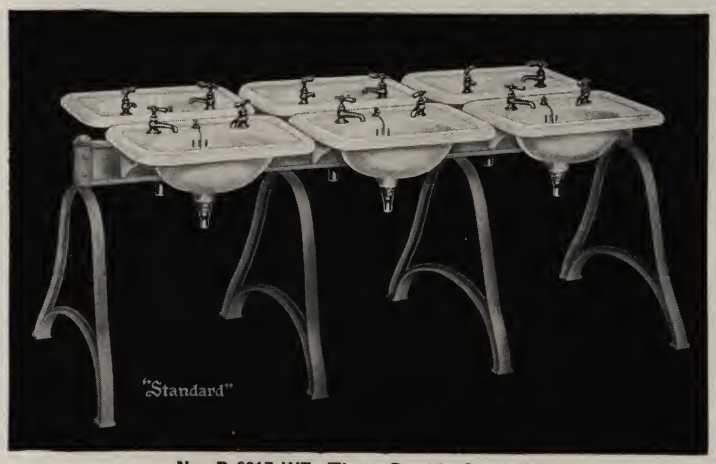
Supply pipes, ⅜-inch I.P. size to wall with escutcheons.

Trap, 1¼-inch bag pattern with metal wall flange

Exposed metal chromium plated.

Nominal Size	inches	16x16	19x19
Bowl	inches	15x10½	16½x10½
Height of Back	inches	5½	7¼
Approx. Ship. Wt., less Fittings	pounds	75	92

Furnished in regular white enamel only.



No. P-6017-WZ, Three Double Sections

Battery of Dover Enameled Cast Iron Lavatories with oval bowl, rear outlet, and integral overflow. On painted supports to floor.

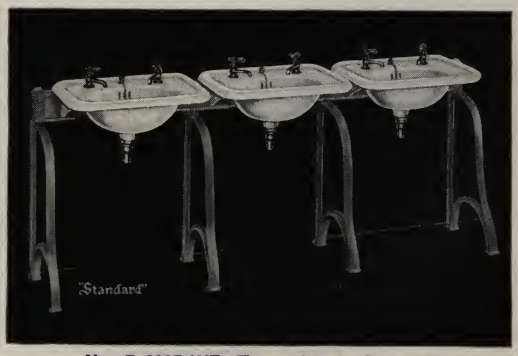
Fittings, quick compression faucets with metal lever handles, chain stays, drain plugs, bead chains, and rubber stoppers.

Supply pipes and traps not furnished.

		No. P-6007-WZ No. P-6017-WZ	No. P-6005-WZ No. P-6015-WZ
Nominal Size	inches	24x18	20x16
Bowl	inches	16x10½	14x10½
Length Over All, Three Sections	inches	86½	74½
Width, Double Section	inches	40¼	36¼
Width, Single Section	inches	21¼	19¼
Height from Floor	inches	31	31
Approx. Ship. Wt., One Dble. Sec	lbs.	250	235
Approx. Ship. Wt., Each Addl. Dble. Sec	lbs.	234	185
Approx. Ship. Wt., One Sgle. Sec	lbs.	120	125
Approx. Ship. Wt., Each Addl. Sgle. Sec	lbs.	110	100

Nos. **P-6005**-WZ and **P-6015**-WZ same as Nos. **P-6007**-WZ and **P-6017**-WZ except with small drilling off center and with small chain stays.

Furnished in regular white enamel only.



No. P-6007-WZ, Three Single Sections

Berger Steel Kitchen Cabinets

With Berger base and wall cabinets, it is possible to plan many combinations for convenient and modern kitchens. They have been designed with helpful built-in features which are efficient aids in reducing kitchen working time and effort. By using the add-a-unit method it is possible to complete the planned kitchen by installing one unit at a time. Base cabinets can be furnished with or without linoleum tops.

No. SC-71 Flour Bins and Sifters

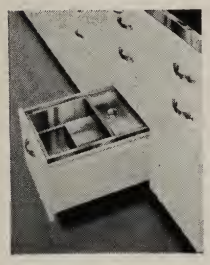
This convenient accessory may be installed in any Berloy Wall Cabinet.

It glides smoothly forward on extension slides for easy accessibility when in use.

Equipped with sifter attachment.

Stops on sliding extensions prevent accidental removal, yet the entire unit may be removed easily for cleaning.

No. SC-72 Bread and Cake Boxes



By the simple addition of this unit, the lower drawer of the No. SCB-156 or the No. SCB-186 BaseCabinets may be transformed into a convenient and efficient bread and cake box.

The unit is heavily tinned and highly polished and is fitted with a ventilated sliding top.

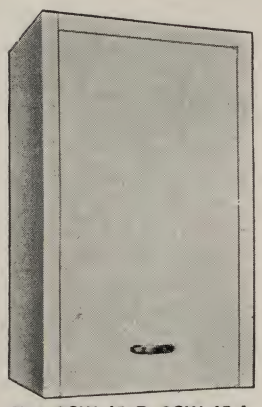
Inside equipment consists of a sliding shelf which partially divides the upper and lower parts of the box.

Can be removed easily for cleaning.

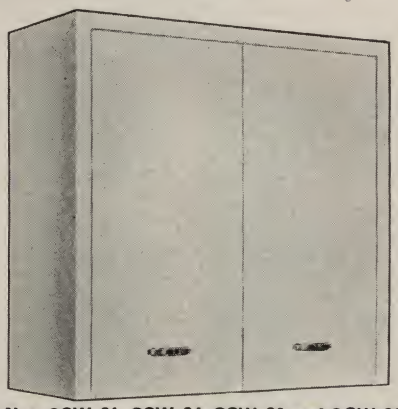
Sizes and Styles of Wall and Base Cabinets

No.	Width Inches	Height Inches	Description
SCW-7-R	18	18	Wall Cabinet, Right Hinges
SCW-7-L	18	18	Wall Cabinet, Left Hinges
SCW-8	21	18	Wall Cabinet .....
SCW-9	24	18	Wall Cabinet .....
SCW-10	30	18	Wall Cabinet .....
SCW-15-R	15	30	Wall Cabinet, Right Hinges
SCW-15-L	15	30	Wall Cabinet, Left Hinges
SCW-18-R	18	30	Wall Cabinet, Right Hinges
SCW-18-L	18	30	Wall Cabinet, Left Hinges
SCW-21	21	30	Wall Cabinet .....
SCW-24	24	30	Wall Cabinet .....
SCW-30	30	30	Wall Cabinet .....
SCW-36	36	30	Wall Cabinet, with Pilaster
*SCB-156	15	34½	Base Cabinet .....
†SCB-185-R	18	34½	Base Cabinet, Right Hinges
†SCB-185-L	18	34½	Base Cabinet, Left Hinges
*SCB-186	18	34½	Base Cabinet .....
*SCB-216	21	34½	Base Cabinet .....
*SCB-245	24	34½	Base Cabinet .....
*SCB-246	24	34½	Base Cabinet .....
†SCB-306	30	34½	Base Cabinet .....
‡SCB-366	36	34½	Base Cabinet .....

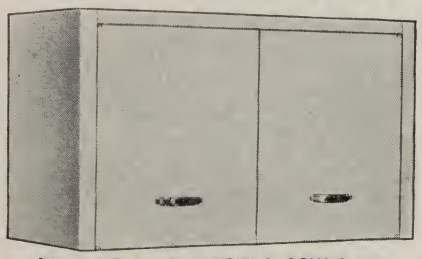
*With 3 drawers.
†With 1 drawer and 1 compartment.
‡With 2 drawers and 2 compartments.



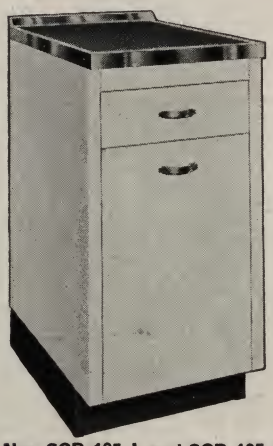
Nos. SCW-15-R, SCW-15-L, SCW-18-R and SCW-18-L



Nos. SCW-21, SCW-24, SCW-30 and SCW-36



Double Door: Nos. SCW-8, SCW-9 and SCW-10
Single Door: Nos. SCW-7-R and SCW-7-L

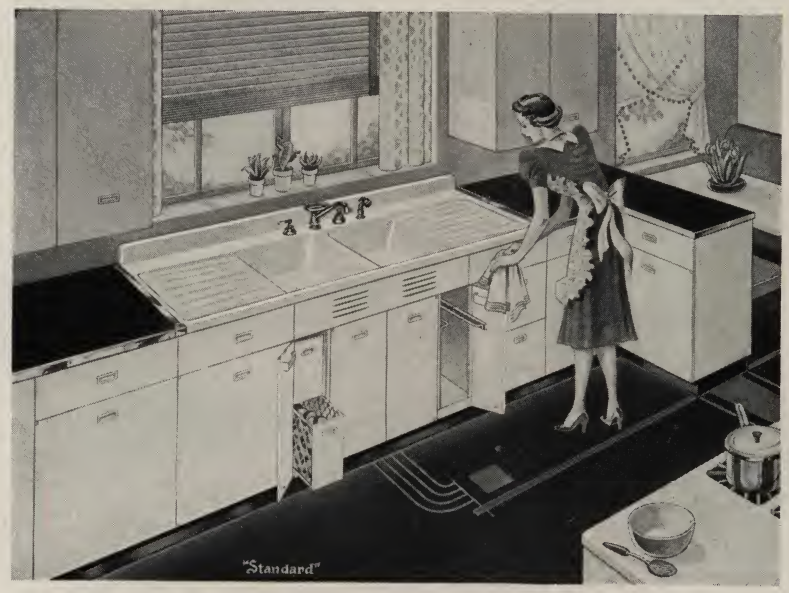


Nos. SCB-185-L and SCB-185-R

Nos. SCB-156 and SCB-245

Nos. SCB-245, SCB-246 and SCB-306

"Standard" Acid-Resisting Enamel Ware



One of the most important improvements ever made in the construction of plumbing fixtures is Acid-Resisting Enamel. It was developed and perfected by the chemists of the American Radiator & Standard Sanitary Corporation.

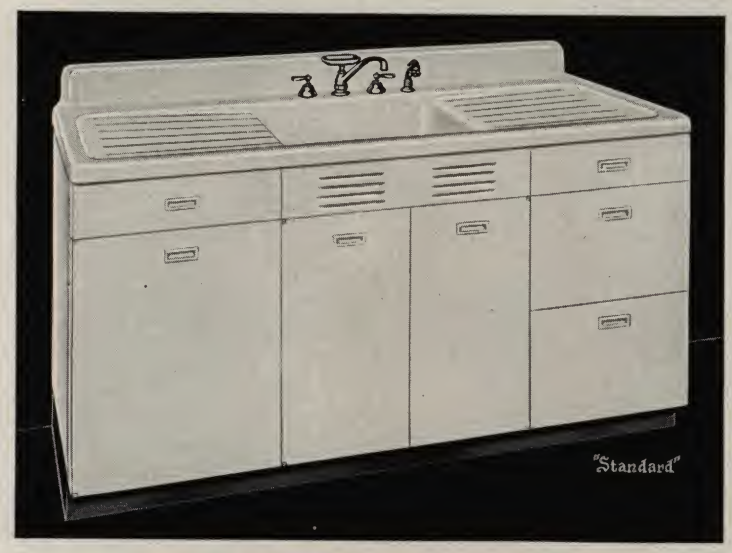
Fruit and vegetable acids do not roughen or discolor plumbing fixtures made of Acid-Resisting Enamel. It has superior durability and permanency of gloss. Not even acids used by tile setters can mar its glass-like surface.

Acid-Resisting Enamel is easy to clean and to keep clean. With a minimum of care it stays spotless and bright. Due to its unusual durability, Acid-Resisting Enamel is being widely specified for homes, hospitals, and hotels.

Although the first cost of plumbing fixtures made of Acid-Resisting Enamel is slightly more, the replacement expense it eliminates and the longer life and beauty it gives to the fixtures result in an appreciable saving.

Plumbing Fixtures in Colors

With the advent of plumbing fixtures in colors, interior decorative schemes are now possible. Such decorations are as adaptable to the kitchen and laundry as to the bath room. They lend a sense of pleasure because of their satisfying beauty. Acid-Resisting Enamel ware is available in ten beautiful shades of lasting color, also in black and white.



No. P-6535-S, Sink with Auto-Unit Spray and No. 450 Cabinet
No. P-6536-S, Sink less Auto-Unit Spray, with No. 450 Cabinet

Royal Hostess Sinks with Cabinets

Sink, enameled cast iron, 8 inches deep with 4-inch back, square rim, and right and left drain boards. Supported on wall hangers and steel cabinet with baked gloss finish.

Fittings, all-metal compression combination swing spout supply fitting with renewable units, lever handles, escutcheons, hose and Auto-Unit thumb-controlled spray attachment with back flow preventor, removable soap dish, and 3½-inch drain plug with removable crumb cup, stopper, and 1½-inch tail-piece.

Trap, 1½-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	60x25
Length of Sink	inches	20
Width of Sink	inches	17¾
Length Each Drain Board	inches	17¾
Floor to Rim	inches	36
Approximate Shipping Weight, with Cabinet	pounds	485
Approximate Shipping Weight, less Cabinet	pounds	265

Sinks furnished in acid-resisting white or colored enamel.
Cabinets furnished in green, ivory, white or primed only.
Cabinet has 2 compartments and 4 drawers. The small compartment under drain board includes a shelf.

No. P-6550-S, Sink on Right with No. 430 Cabinet
No. P-6552-S, Sink on Left with No. 432 Cabinet

Royal Hostess Sinks with Cabinets

Sink, acid-resisting enameled cast iron, with back, square rim, and single drain board. Supported on wall hangers.

Fittings, swing spout faucet with renewable units, Auto-Unit spray attachment, soap dish, 3½-inch drain plug with crumb cup, stopper, and 1½-inch P trap.

Cabinet, steel, baked white gloss finish.

Nominal Size	inches	42x25
Length of Sink	inches	19¾
Length of Drain Board	inches	17½
Approximate Shipping Weight, with Cabinet	pounds	330

Cabinets furnished green, ivory, white, or primed only.

No. **P-6551-S**, same as No. **P-6550-S**, less Auto-Unit spray.

No. **P-6553-S**, same as No. **P-6552-S**, less Auto-Unit spray.

No. P-6575-S, Sink with Auto-Spray Unit and No. 415 Cabinet
No. P-6576-S, Sink less Auto-Spray Unit, with No. 415 Cabinet

Royal Hostess Sinks with Cabinets

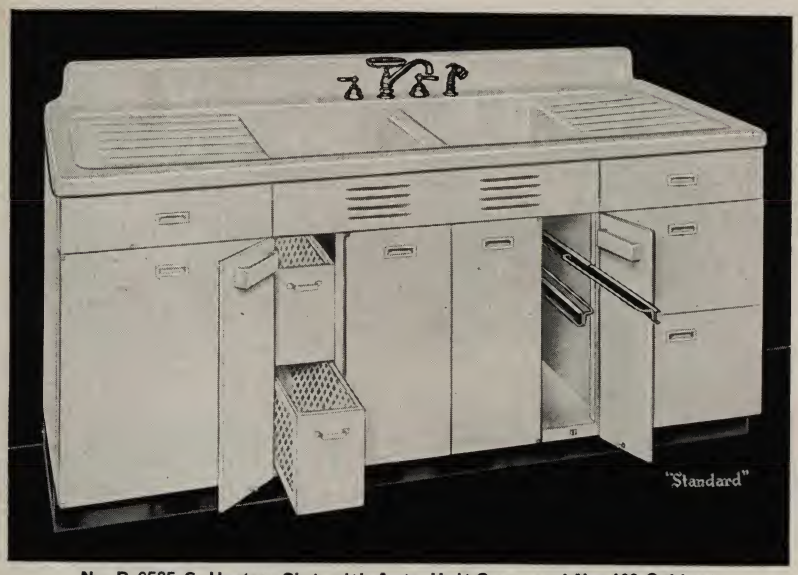
Sink, enameled cast iron, with two sink compartments, back, and square rim. Supported on wall hangers.

Fittings, combination swing spout faucet with renewable units, Auto-Unit Spray attachment, two 3½-inch drain plugs with crumb cups, stoppers, and two 1½-inch P traps.

Cabinet, steel, baked white gloss finish, has one storage compartment with two doors.

Nominal Size	inches	42x25
Length Each Sink	inches	17½
Height from Floor to Rim	inches	36
Approximate Shipping Weight, with Cabinet	pounds	338

Cabinets furnished green, ivory, white, or primed only.



No. P-6585-S, Hostess Sink with Auto-Unit Spray and No. 460 Cabinet
No. P-6586-S, Hostess Sink less Auto-Unit Spray, with No. 460 Cabinet

Royal Hostess Sinks with Cabinets

Sink, enameled cast iron, with two compartments, right and left drain boards, back, and square rim. Supported on wall hangers.

Fittings, combination swing spout faucet with renewable units, lever handles, escutcheons, hose and Auto-Unit thumb-controlled spray attachment with backflow preventor, removable soap dish, and two 3½-inch drain plugs with removable crumb cups, stoppers and 1½-inch tail pieces.

Traps, two, 1½-inch P pattern with metal wall flanges.

Cabinet, steel, baked white gloss finish, has four storage compartments and four drawers. Two vegetable drawers and sliding towel bars are features of this cabinet.

Nominal Size	inches	72x25
Length Each Sink	inches	16
Width Each Sink, Inside	inches	17¾
Depth Each Sink	inches	8
Length Each Drain Board	inches	16½
Height of Back	inches	4
Height from Floor to Rim	inches	36
Approximate Shipping Weight, Sink	pounds	365
Approximate Shipping Weight, Cabinet	pounds	215

Sinks furnished in acid-resisting white or colored enamel.

Cabinets furnished green, ivory, white, or primed only.

No. P-6620-QS, Sink without Cabinet
No. P-6620-QS, Sink with Cabinet*

Norton Sinks and Cabinets

Sink, enameled cast iron, with back, roll rim, and right and left drainboards. Supported on concealed wall hangers and steel cabinet.

Fittings, all-metal compression combination swing spout faucet with lever handles, removable soap dish, and 3½-in. drain plug with removable crumb cup, stopper, and 1½-inch tail-piece.

Trap, 1½-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Cabinet, steel, baked white gloss finish, has a center compartment with louvre, double doors, two drawers and a compartment on each side with two shelves and a single door. Black painted adjustable bases permit sink to set 33½ to 36 inches from floor to top of rim.

Nominal Size	inches	60x25	72x25
Length Overall	inches	60	72
Width Overall	inches	25	25
Length of Sink	inches	20	20
Depth of Sink	inches	8	8
Length Each Drainboard	inches	17¾	23¾
Height of Back	inches	8	8
Approximate Shipping Weight, with Cabinet	pounds	486	558

Back of sink has square ends for installation between cabinets.
Furnished in acid-resisting white or colored enamel.
Cabinets furnished green, ivory, or white only; also furnished with prime coat to be painted on job.
*Cabinet No. 660 for 60-inch sink; No. 672 for 72-inch sink.

No. P-6700-QS

Madison Enameled Cast Iron Sink with back and apron. Supported on concealed wall hanger.

Fittings, all-metal quick compression combination swing spout faucet with lever handles, removable soap dish, and 3½-inch drain plug with removable crumb cup, stopper, and 1½-inch tail-piece.

Trap, 1½-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	24x20	30x20
Length Over All	inches	24½	30¾
Width Over All	inches	20¼	20¼
Depth of Sink	inches	6	6
Height of Back	inches	8	8
Depth of Apron	inches	5½	5½
Approx. Ship. Wt., less Fittings	pounds	125	155

Regular white and acid-resisting white or colored enamel.

No. P-6715-QS, for Left Corner, and with Sink on Left
No. P-6716-QS, for Right Corner, and with Sink on Right

Concord Enameled Cast Iron Sink with back, apron, left end piece, and single drain board. Supported on concealed wall hangers.

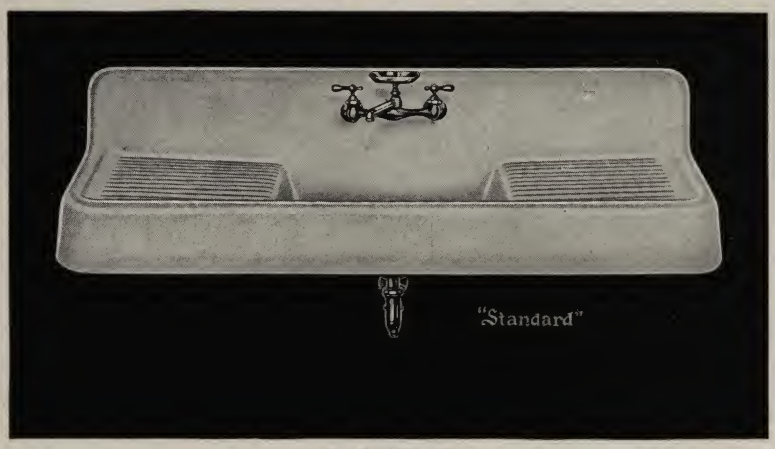
Fittings, all-metal compression combination swing spout faucet with renewable seats, lever handles, removable soap dish, and 3½-inch drain plug with removable crumb cup, stopper, and 1½-inch tailpiece.

Trap, 1½-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	42x20	52x20
Length Over All	inches	42¼	52¼
Width Over All	inches	20¼	20¼
Length of Sink	inches	22	28
Depth of Sink	inches	6	6
Depth of Apron	inches	5½	5½
Length of Drain Board	inches	20¼	24¼
Height of Back	inches	8	8
Approx. Ship. Wt., less Fittings	pounds	205	235

Regular white and acid-resisting white or colored enamel.



No. P-6710-QS

Clinton Enameled Cast Iron Sink with back, apron, and right and left drain boards. Supported on concealed wall hangers.

Fittings, all-metal quick compression combination swing spout faucet with renewable units, lever handles, removable soap dish, and 3½-inch drain plug with removable crumb cup, stopper, and 1½-inch tail-piece.

Trap, 1½-inch P pattern with metal wall flange.

Exposed metal chromium plated.

The **Bedford**, as described except with single drain board, is illustrated below.

		Clinton, Double Drain Board		Bedford, Single Drain Board	
Nominal Size	inches	60x22	74x20	42x20	52x20
Length Over All	inches	60¾	75	42½	52½
Width Over All	inches	22¼	20¼	20¼	20¼
Length of Sink	inches	22	26	22¼	28¼
Depth of Sink	inches	6	6	6	6
Length Each Drain Board	inches	19¼	24¼	20¼	24¼
Height of Back	inches	8	8	8	8
Depth of Apron	inches	6	5½	5½	5½
Approx. Ship. Wt., less Fittings	pounds	298	365	181	220

Furnished regular white and acid-resisting white or colored enamel.

No. P-6707-QS Sink on Right
No. P-6706-QS Sink on Left

No. P-6800-E

Salem Enameled Cast Iron Sink with back and roll rim. Supported on concealed wall hanger.

Fittings, two ½-inch T-handle compression single faucets with adjustable threaded flanges, and 3½-inch drain plug with removable crumb cup, stopper, and 1½-in. tail-piece.

Trap, 1½-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Depth of sink, 6 inches. Height of back, 8 inches.

Size In.	Approx. Ship. Wt. Lb. less Fittings	Size In.	Approx. Ship. Wt. Lb. Less Fittings
18x18	70	30x18	102
24x16	80	30x20	108
24x18	85	36x20	132
24x20	90	.....	...

Furnished in acid-resisting white or colored enamel.

No. P-6820-QS, for Left Corner, and with Sink on Left
No. P-6821-QS, for Right Corner, and with Sink on Right

Putnam Enameled Cast Iron Sink with back, roll rim, left end piece, and single drain board. Supported on concealed wall hangers.

Fittings, all-metal quick compression combination swing spout faucet with lever handles, removable soap dish, and 3½-inch drain plug with removable crumb cup, stopper, and 1½-inch tail-piece.

Trap, 1½-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	46x20	52x20
Length Over All	inches	46	52
Width Over All	inches	20	20
Length of Sink	inches	26	26
Depth of Sink	inches	6	6
Length of Drain Board	inches	15¾	22
Height of Back	inches	8	8
Approx. Ship. Wt., less Fittings	pounds	185	200

Regular white and acid-resisting white enamel.

No. P-6814-QS

Hudson Enameled Cast Iron Sink with back, roll rim, and right and left drain boards. Supported on concealed wall hangers.

Fittings, all-metal quick compression combination swing spout faucet with lever handles, removable soap dish, and 3½-inch drain plug with removable crumb cup, stopper, and 1½-inch tail-piece.

Trap, 1½-inch P pattern with metal wall flange.

Exposed metal chromium plated.

The **Warren,** as described except with single drain board, is illustrated below.

		Hudson, Double Drain Board	Warren, Single Drain Board	
Nominal Size	inches	60x22	42x20	52x20
Length Over All	inches	60	42	52
Width Over All	inches	22	20	20
Length of Sink	inches	21½	22	28
Depth of Sink	inches	6	6	6
Length Each Drain Board	inches	19¼	20¼	24¼
Height of Back	inches	8	8	8
Approx. Ship. Wt., less Fittings	pounds	248	155	190

Furnished regular white and acid-resisting white or colored enamel.

No. P-6816-QS, Sink on Right
No. P-6815-QS, Sink on Left

No. P-6814-QS Sink with No. 800 Cabinet

Hudson Sinks with Cabinets

Sink, acid-resisting enameled cast iron, with back, roll rim, and two drain boards. Supported on wall hangers.

Fittings, all-metal compression combination swing spout faucet, 3½-inch drain plug with removable crumb cup, stopper, 1½-inch tail-piece, and 1½-inch P trap.

Cabinet, steel, baked white gloss finish, has compartment under sink and two drawers and compartment under drain boards. Adjustable bases permit sink to set 33 to 36 inches.

Nominal Size	inches	60x22
Length of Sink	inches	21½
Length of Each Drain Board	inches	17
Approximate Shipping Weight, less Fittings	pounds	400

Cabinets furnished green, ivory, white, or primed only.

No. P-6815-QS, Sink on Left with No. 846 Cabinet
No. P-6816-QS, Sink on Right with No. 845 Cabinet

Warren Sinks with Cabinets

Sink, acid-resisting enameled cast iron, with back, roll rim, and single drain board. Supported on wall hangers.

Fittings, all-metal compression combination swing spout faucet, 3½-inch drain plug with removable crumb cup, stopper, 1½-inch tail-piece, and 1½-inch P trap.

Cabinet, steel, baked white gloss finish, has compartment under sink and two drawers and compartment under drain board. Adjustable bases permit sink to set 33 to 36 inches.

Nominal Size	inches	42x20	*52x20
Length of Sink	inches	22	28
Length of Drain Board	inches	20¼	24¼
Approx. Ship. Weight, less Fittings	pounds	265	315

*Has two doors under sink.

Cabinets furnished green, ivory, white, or primed only.

No. P-6816-QS, Sink on Right with No. 421 Cabinet
No. P-6815-QS, Sink on Left with No. 422 Cabinet

Warren Sinks with Cabinets

Sink, enameled cast iron, with back, roll rim, and drain board. Supported on concealed wall hangers.

Fittings, all-metal quick compression combination swing spout faucet, 3½-inch drain plug with removable crumb cup, stopper, 1½-inch tail-piece, and 1½-inch P trap.

Cabinet, steel, baked white gloss finish, has compartment under sink and compartment with two shelves under drain board. Adjustable bases permit sink to set 33 to 36 inches.

Nominal Size	inches	42x20
Length of Sink	inches	22
Length of Drain Board	inches	20¼
Approximate Shipping Weight, less Fittings	pounds	257

Regular white and acid-resisting white or colored enamel.

Cabinets furnished green, ivory, white, or primed.

***No. P-6835-S, Sink with Hose, Auto-Unit Spray, and Cabinet**
***No. P-6836-S, Sink less Hose, and Auto-Unit Spray, with Cabinet**

Utility Hostess Sinks with Cabinets

Sink, enameled cast iron, 8 inches deep with 6-inch back, square rim, and right and left drainboards. Supported on wall hangers and steel cabinet with baked gloss finish.

Fittings, all-metal compression combination swing spout supply fitting with renewable units, lever handles, escutcheons, hose and auto-unit thumb-controlled spray attachment with back flow preventor, removable soap dish and 3½-inch drain plug with removable crumb cup, stopper and 1½-inch tail-piece.

Trap, 1½-inch P pattern with metal wall flange.

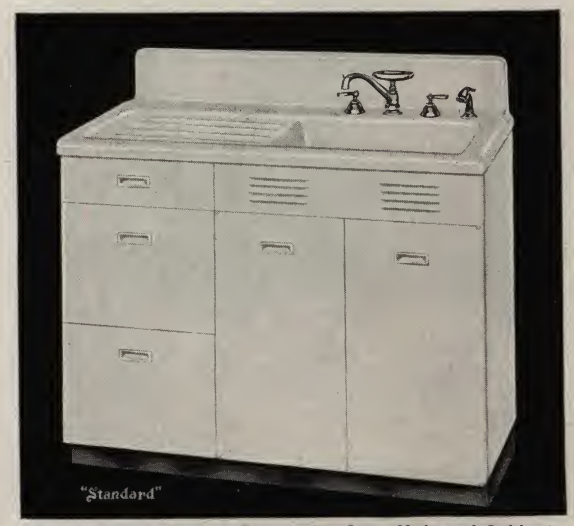
Exposed metal chromium plated.

Nominal Size	inches	54x22	60x22
Length of Sink	inches	18	20
Width of Sink	inches	15	15
Length Each Drainboard	inches	16	18
Floor to Rim	inches	36	36
Approximate Shipping Weight, with Cabinet	pounds	415	465
Approximate Shipping Weight, less Cabinet	pounds	245	265

*Cabinet No. **350**, 54-inch; No. **360**, 60-inch with 2 compartments and 4 drawers.

Sinks furnished in acid-resisting white or colored enamel.

Cabinets furnished in green, ivory, white or primed only.



*No. P-6850-S, Sink at Right with Auto-Unit and Cabinet
*No. P-6851-S, Sink at Right less Auto-Unit with Cabinet

Utility Hostess Sinks with Cabinets

Sink, enameled cast iron, 8 inches deep with 6-inch back, square rim, and single drain board. Supported on wall hangers and steel cabinet with baked gloss finish.

Fittings, all-metal compression combination swing spout supply fitting with renewable units, lever handles, escutcheons, hose and auto-unit thumb controlled spray attachment with back flow preventor, removable soap dish, and 3½-inch drain plug with removable crumb cup, stopper, and 1½-inch tail-piece.

Trap, 1½-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Sinks furnished in acid-resisting white or colored enamel.

Cabinets furnished in green, ivory, white or primed only.

Nominal Size	inches	42x22	48x22
Length of Sink	inches	18¾	21¾
Width of Sink	inches	15	15
Length Each Drain Board	inches	18¾	21¾
Floor to Rim	inches	36	36
Approximate Shipping Weight, with Cabinet	pounds	315	365
Approximate Shipping Weight, less Cabinet	pounds	185	215

*Cabinet No. **330**, 42-inch; No. **340**, 48-inch with one compartment at right and 3 drawers.

†Cabinet No. **332**, 42-inch; No. **342**, 48-inch with one compartment at left and 3 drawers.

Cabinet in 42-inch size only available with 2 compartments and 1 drawer. For sink at right specify Cabinet No. **331**, sink at left, No. **333**.

†No. P-6852-S, Sink at Left with Auto-Unit Spray and Cabinet
†No. P-6853-S, Sink at Left, less Auto-Unit Spray with Cabinet

No. P-6875-S Sink with No. 320 Cabinet

Utility Hostess Sinks with Cabinets

Sink, enameled cast iron, with two sink compartments, 8 inches deep, 6-inch back, and square rim. Wall hangers.

Fittings, swing spout faucet with renewable units, hose and Auto-Unit spray, soap dish, two 3½-inch drain plugs with crumb cups, stoppers, and two 1½-inch P traps.

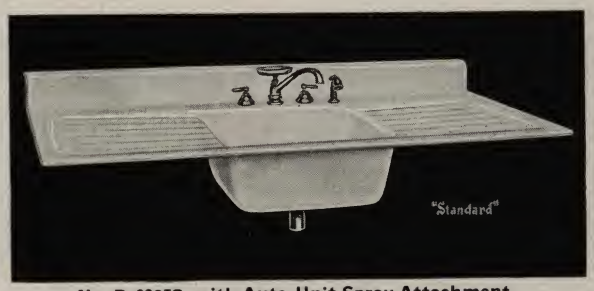
Cabinet, steel, baked white gloss finish, has one storage compartment with half width shelf and two doors.

Nominal Size	inches	42x22
Length Each Sink	inches	17¾
Height from Floor to Rim	inches	36
Approximate Shipping Weight, with Cabinet	pounds	325

Furnished in acid-resisting white or colored enamel.

Cabinets furnished in green, ivory, white, or primed only.

No. P-6876-S, same as above, except less Auto-Unit spray.



No. P-6985S, with Auto-Unit Spray Attachment
No. P-6986S, less Auto-Unit Spray Attachment

Custom Hostess Enameled Cast Iron Flat Rim Sink

with back and center outlet. For cabinet installations.

Fittings, all-metal compression double sink faucet with elevated swinging spout, hose and auto-unit spray attachment with back flow preventor, compression valves with lever handles and escutcheons, removable soap dish, 3½-inch drain plug with removable crumb cup, stopper, and 1½-inch tail-piece.

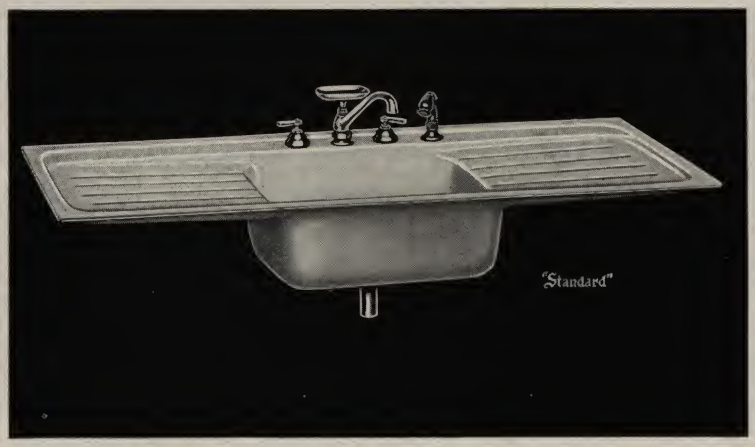
Trap not furnished.

Exposed metal chromium plated.

Nominal Size	inches	58x23½
Sink Inside	inches	20x17¾
Each Drain Board	inches	18
Depth of Sink	inches	8
Height of Back	inches	4
Approximate Shipping Weight, Less Fittings	pounds	265

Sinks are only furnished complete with supply fittings.

Furnished in acid-resisting white or colored enamel.



No. P-7002S, Double Drain Board Sink with Auto-Unit Spray
No. P-7003S, Double Drain Board Sink less Auto-Unit Spray

		Double Drain Board	Single Drain Board
Nominal Size	inches	54x21	42x21
Length of Sink, Inside	inches	18½	19½
Width of Sink, Inside	inches	15½	15½
Length Each Drain Board	inches	17¾	21¼
Depth Sink	inches	8	8
Width Back Ledge	inches	3	3
Approx. Shipping Weight	pounds	225	172

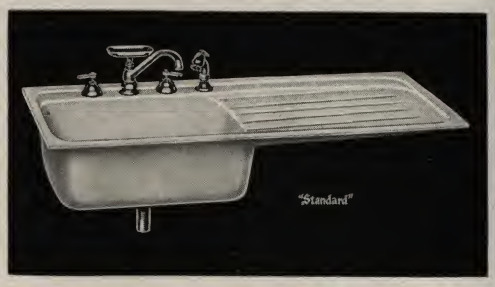
Furnished in acid-resisting white or colored enamel.

Custom-Line Enameled Cast Iron Flat Rim Sink with back ledge and center outlet. For cabinet installations.

Fittings, all-metal compression combination swing spout supply fitting with renewable units, lever handles, escutcheons, hose and Auto-Unit thumb controlled spray attachment with back flow preventer, removable soap dish, and 3½-inch drain plug with removable crumb cup, stopper, and 1½-inch tail-piece.

Trap not furnished.

Exposed metal chromium plated.



No. P-7008S, Sink at Left with Auto-Unit Spray
No. P-7009S, Sink at Left less Auto-Unit Spray
No. P-7004S, Sink at Right with Auto-Unit Spray
No. P-7005S, Sink at Right less Auto-Unit Spray

No. P-7010S, with Auto-Unit Spray Attachment
No. P-7011S, less Auto-Unit Spray Attachment

Custom-Line Enameled Cast Iron Flat Rim Sink with back ledge and center outlet. For cabinet installations.

Fittings, all-metal compression double sink faucet with elevated swinging spout, hose and auto-unit spray attachment with back flow preventor, compression valves with lever handles and escutcheons, removable soap dish, 3½-inch drain plug with removable crumb cup, stopper, and 1½-inch tail-piece.

Trap not furnished.

Exposed metal chromium plated.

Nominal Size	inches	24x21	30x21
Size Sink	inches	21½x15½	27½x15½
Depth of Sink	inches	8	8
Width of Ledge	inches	3	3
Approximate Shipping Weight, less Fittings	pounds	91	102

Sinks are only furnished complete with supply fittings.

Furnished in acid-resisting white or colored enamel.

No. P-7015S, with Auto-Unit Spray Attachment
No. P-7016S, less Auto-Unit Spray Attachment

Custom-Line Enameled Cast Iron Flat Rim Sink with double compartment, back ledge, and center outlets. For cabinet installations.

Fittings, all-metal compression double sink faucet with elevated swinging spout, hose and auto-unit spray attachment with back flow preventor, compression valves with lever handles and escutcheons, removable soap dish, two 3½-inch drain plugs with removable crumb cups, stoppers, and 1½-inch tail-pieces.

Trap not furnished.

Exposed metal chromium plated.

Nominal Size	inches	32x21	42x21
Size Each Sink	inches	13½x15½	18½x15½
Depth of Sinks	inches	8	8
Width of Ledge	inches	3	3
Approximate Shipping Weight, less Fittings	pounds	130	155

Sinks are only furnished complete with supply fittings.

Furnished in acid-resisting white or colored enamel.

No. P-7020-D

Enameled Cast Iron Flat Rim Sink, 6 inches deep, with end outlet and 3½-inch drain plug with removable crumb cup, stopper, and 1½-in. tailpiece. Exposed metal chromium plated.

Size . inches	18x12	20x14	20x16	24x16	24x18	30x18	24x20	30x20	36x20
Weight..lb.	28	35	38	43	48	60	51	72	85

No. P-7030

Same as above except with flat strainer, horn and follower for lead pipe on sink funnel.

Size.....inches	24x16	30x18
Weight.....pounds	44	62

Furnished in acid-resisting white or colored enamel.

No. P-7021-D

Enameled Cast Iron Flat Rim Sink 6 inches deep, with center outlet and 3½-inch drain plug with removable crumb cup, stopper, and 1½-inch tail-piece.

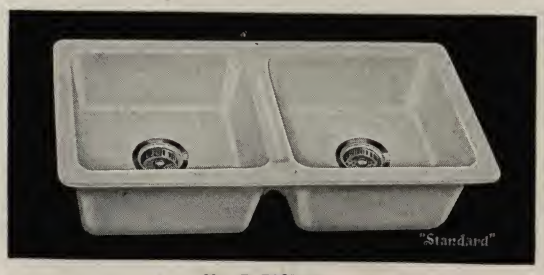
Exposed metal chromium plated.

Size.....inches	12x12	24x20	30x20
Approx. Ship. Wt., less Strainer....lb.	18	55	60

No. P-7023-D, same as above except 8 inches deep.

Size.....inches	24x18	30x18
Approx. Ship. Wt., less Strainer.....pounds	50	65

Furnished in acid-resisting white or colored enamel.



No. P-7037-D

Enameled Cast Iron Two-Compartment Flat Rim Sink with center outlet, two 3½-inch drain plugs with removable crumb cups, stoppers, and 1½-inch tail-pieces.

Nominal Size.....inches	32x20	42x20
Depth.....inches	8	8
Approximate Shipping Weight.....pounds	105	136

This sink can be furnished with separate 12-inch high back.

Furnished in acid-resisting white or colored enamel.

No. F-7223-D

Vitreous China Flat Rim Sink 8 inches deep, with center outlet and 3½ inch drain plug with strainer, and 1½-inch tail-piece.

Nominal Size.....inches	20x18	24x18	30x18
Size Inside.....inches	17¼x15¼	20½x14½	26½x14½
Approx. Ship. Wt., less Strainer.....lb.	50	65	85

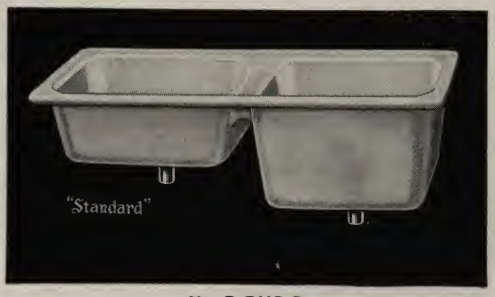
Furnished in white only.

No. F-7223-D No. F-7515-D

Vitreous China Laundry Tray and Sink for counter top installation. With flat rims and center outlets. Sink and tray are separate.

Fittings, 3½-inch drain plug with strainer in sink, and 1½-inch drain plug with rubber stopper in tray.

	No. F-7223-D Sink	No. F-7515-D Tray
Nominal Size.....inches	20x18	20x18
Length Overall.....inches	20	20
Width Overall.....inches	18	18
Size Inside.....inches	17¼x15¼	17¼x15¼
Depth.....inches	8	13
Approximate Ship. Weight..lbs.	50	70



No. P-7415-D

Enameled Cast Iron Laundry Tray and Sink Combination in one piece with flat rim, center outlets, and painted outside.

Fittings, 3½-inch drain plug with crumb cup and metal stopper in sink, and 1½-inch drain plug with rubber stopper in tray.

Nominal Size.....inches	42x20
Inside, Each Compartment.....inches	18½x17½
Depth Tray.....inches	13
Depth Sink.....inches	8
Approximate Shipping Weight.....pounds	195

Regular white and acid-resisting white or colored enamel.

No. P-6940-QS

Lynn Enameled Cast Iron Sink with back and extended flat rim for tiling-in. Supported on concealed wall hangers.

Fittings, all-metal quick compression combination swing spout faucet with lever handles, removable soap dish and 3½-inch drain plug with removable crumb cup, stopper, and 1½-inch tail-piece.

Trap, 1½-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size.....inches	30x18	24x20	30x20
Length of Sink.....inches	30	24	30
Depth of Sink.....inches	6	6	6
Height of Back.....inches	8	8	8
Approx. Ship. Wt., less Fittings..lbs.	105	95	115

Can be furnished with flat strainer when specified.

Regular white and acid-resisting white or colored enamel.

No. P-7420-D, Sink on Left with Cabinet*
No. P-7421-D, Sink on Right with Cabinet*

Monarch Laundry Tray and Sink Combination

Sink, enameled cast iron, with sink and tray compartments, back ledge, and roll rim.

Fittings, swing spout faucet with removable soap dish, 3½-inch strainer with crumb cup and metal stopper in sink, and 2-inch drain plug with rubber stopper in tray.

Cabinet, steel, baked white gloss finish. Black painted bases to set 34 to 36 inches from floor to rim.

Nominal Size.....inches	42x25	50x25
Approx. Ship. Wt., with Cabinet.....pounds	300	365

Depth sink, 8 in. Depth tray, 13 in. Height back, 6 in.
*Cabinet No. 824 for 42-inch size; No. 825 for 50-inch size.

No. P-7420 DL, Sink at Left and Tray at Right
No. P-7421-DL, Sink at Right and Tray at Left

Monarch Enameled Cast Iron Sink and Laundry Tray Combination with back ledge, roll rim, and adjustable leg.

Fittings, all-metal built-in compression combination supply fittings with swing spout, removable soap dish, 3½-inch drain plug with crumb cup in sink, and 2-inch drain plug with rubber stopper in tray. Trap not furnished.

Nominal Size.....inches	42x25	50x25
Sink Inside.....inches	17¼x16¼	21¼x16¼
Tray Inside.....inches	17¼x16¼	21¼x16¼
Depth Sink.....inches	8	8
Depth Tray.....inches	13	13
Approximate Shipping Weight....lb.	255	300

No. P-7430-DL, Sink at Left and Tray at Right
No. P-7431-DL, Sink at Right and Tray at Left

Monarch Enameled Cast Iron Sink and Laundry Tray Combination with back ledge, apron, and adjustable legs.

Fittings, all-metal built-in compression combination supply fittings with swing spout, removable soap dish, 3½-inch drain plug with crumb cup in sink, and 2-inch drain plug with rubber stopper in tray. Trap not furnished.

Nominal Size.....inches	42x25	50x25
Sink Inside.....inches	17¼x16¼	21¼x16¼
Tray Inside.....inches	17¼x16¼	21¼x16¼
Depth Sink.....inches	8	8
Depth Tray.....inches	13	13
Approximate Shipping Weight...lb.	300	360

No. PKC2060, with Cabinet No. C2060, less Cabinet

Series C 25-Inch Whitehead Single Bowl Sinks and Cabinets

Sink, Monel, with right and left drain boards. Supported on concealed hangers and steel cabinet.

Fittings, quick compression combination swing spout pedestal faucet with metal cross handles and hand-operated crumb cup strainer with Monel basket.

Cabinet, steel construction.

Standard colors are ivory, white, light green, or dark ivory enamel. Other finishes are available at added cost.

With Single Drain Board

No.	*PKC2048L *PKC2048R
Nominal Size.....in.	48x25
Length Over All.....in.	48
Width Over All.....in.	25
Length of Sink Bowl.....in.	20
Length of Drain Board.....in.	26¼
Shipping Weight, with 7⅝-Inch Back, less Fittings.....lbs.	300

*Suffix L or R signifies left or right hand drain board.

With Double Drain Boards

No.	PKC2060	PKC2072	PKC2584	PKC2596	PKC25108	PKC25120	PKC25132	PKC25144	PKC25156	PKC25168
Nominal Size.....in.	60x25	72x25	84x25	96x25	108x25	120x25	132x25	144x25	156x25	168x25
Length Over All.....in.	60	72	84	96	108	120	132	144	156	168
Width Over All.....in.	25	25	25	25	25	25	25	25	25	25
Length of Sink Bowl..in.	20	20	25	25	25	25	25	25	25	25
Length of Each Drain Board.....in.	20	26	29½	35½	41½	47½	53½	59½	65½	71½
Shipping Weight, with 7¾-Inch Back, less Fittings.....lbs.	380	420	450	600	645	760	865	1050	1120	1200

Available with 7⅝ or 1⅛-inch backs. Specify back height when ordering. Available with 1 or 2 end splashers if desired. Sinks are also available without base cabinets; to order, omit prefix PK.

All combinations are 32 inches high, plus a 4-inch sub-base, which makes the total height including the sub-base 36 inches from the floor.

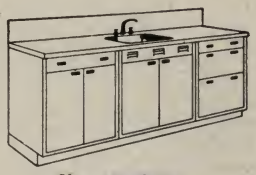
Cabinet Arrangements of Standard Ensembles

No. PKC2048R

No. PKC2060

No. PKC2072

No. PKC2584



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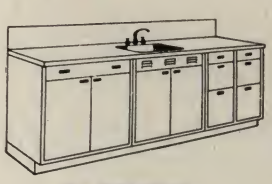

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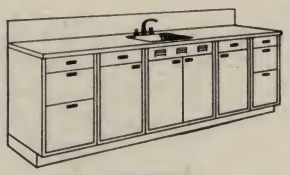

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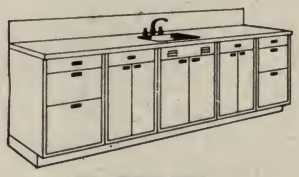
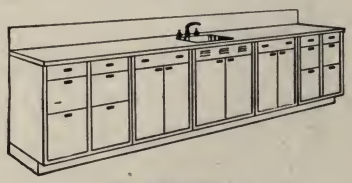


Nos. PKC25132, PKC25144 and PKC25156



No. PKC25168

Whitehead Monel Metal Sinks

At first glance, it might not seem important that Monel is an alloy of two-thirds nickel and one-third copper. The fact that this metal has extreme durability with the strength and toughness of steel may have little significance.

However, when one realizes that Monel is also rust-proof and resistant to all food acids and alkalis usually found in a home, it begins to have interesting possibilities.

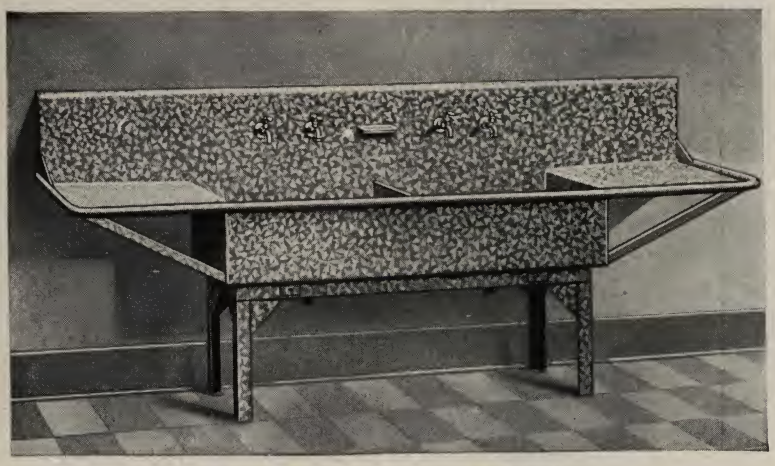
When it is found that Monel is not a coating, but a solid metal all the way through with nothing to chip, crack or wear off, then its advantages in a home become obvious.

All Whitehead Sinks are made of Monel. When it is realized that the sink performs the hardest job in the kitchen, it becomes clear that the Whitehead Sink is exactly suited to the modern work-saving kitchen with its centralized activity.

Monel is practically immune to wear and tear. For this reason, it is widely used in railroad dining car kitchens. Monel can be kept clean with minimum effort. Many eminent hotels have found it satisfactory for the kitchen.

The luster of Monel is as beautiful as old silver—a beauty that never departs because Monel is a solid metal all the way through. Watchcases are now being made of Monel, because of its beauty.

The Whitehead Monel Sink for kitchens has further desirable advantages. It is resilient enough to soften impacts of dishes and to reduce breakage. Hot pans can be set on it without fear. Monel blends beautifully with any color scheme.



No. 60DB, with Double Drain Boards
No. 60, without Drain Boards

Elkay Government Type Scullery Sink with 2 compartments and integral drainboards.

Roll rim, front, bottom and back made of one sheet of 12-gage copper bearing blue annealed steel, coved at corners to prevent collection of grease and dirt.

Ends are welded in.

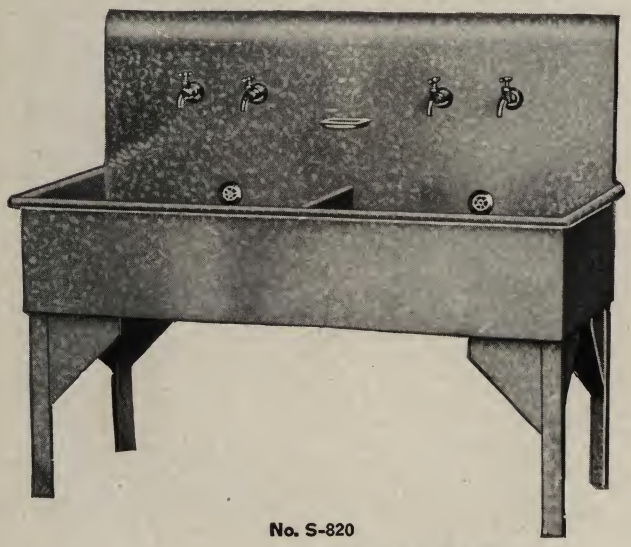
Supported on angle frame and legs with gusset plates arranged to fasten to floor. Frame and legs are detachable for shipping.

Fittings, 4 compression faucets, one soap dish, and 2 connected drains and overflows with rubber stoppers.

		With Double Drain Boards	Without Drain Boards
Nominal Size	inches	60	60
Length Inside	inches	24	24
Width Inside	inches	12	12
Depth	inches	24	..
Length Each Drainboard	inches	15	15
Height of Back	inches	36	36
Floor to Rim	inches	325	235
Approximate Shipping Weight	pounds		

Constructed in conformance with Federal Specification WW-P-541A, March, 1940, E-20, Fig. 47, Outfit S-108-D.

These sinks are hot dip galvanized after fabrication, insuring edges against rust and corrosion.



No. S-820

Galvanized Sheet Steel Scullery Sink with roll rim and two compartments. Roll rim, front, bottom and back made of one sheet of 12-gage copper bearing blue annealed steel. Ends are welded in. Supported on galvanized angle legs with gusset plates, arranged to fasten to floor. All hot dip galvanized after fabrication, insuring all edges against rust and corrosion. Drainboard is 16 gage galvanized steel with angle braces and bolts for fastening to sink.

Fittings, four compression faucets, one soap dish, and two connected drains and overflows with rubber stoppers.

Trap, not furnished.

Detachable drainboards can be furnished, as illustrated below.

No. S-820 Sink

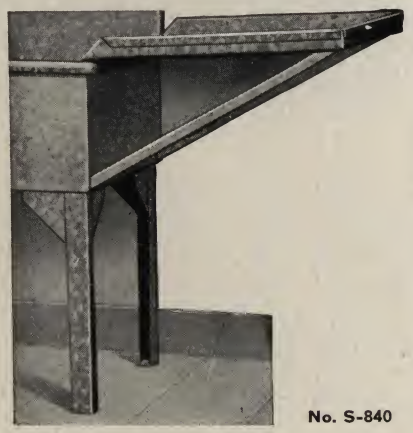
Length Inside	inches	30	36	42	48	54	60
Width Inside	inches	24	24	24	24	24	24
Depth	inches	12	12	12	12	12	12
Height of Back	inches	15	15	15	15	15	15
Floor to Rim	inches	32	32	32	32	32	32
Approx. Ship. Wt.	pounds	140	150	160	175	185	200

For over all dimensions, add 2½ inches to length and 3 inches to width.

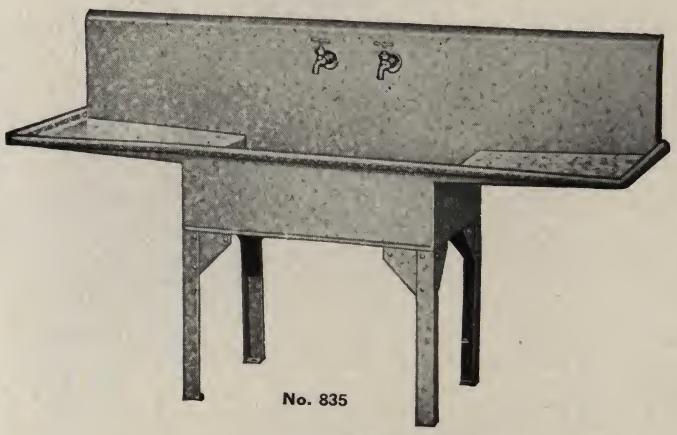
No. S-840 Drainboard

Length	inches	24	30	36	*42	*48	*54
Width	inches	24	24	24	24	24	24
Approx. Ship. Wt.	pounds	30	40	50	60	70	80

*With pipe legs and floor flanges instead of angle braces.



No. S-840



No. 835

Elkay Galvanized Sheet Steel Scullery Sink with single compartment, roll rim front and ends, and integral back and drain boards. Made of 12-gage copper-bearing blue annealed steel, hot dip galvanized after fabrication.

Fittings, 2 compression faucets, one soap dish, and connected drain and overflow with rubber stopper.

No. **825,** as described above except with detachable drain board on one end only.

Specify right or left drain board when ordering.

***Dimensions**

Length Inside.....inches	30	36	42	48	54	60
Width Inside.....inches	24	24	24	24	24	24
Depth.....inches	12	12	12	12	12	12
Height of Back.....inches	15	15	15	15	15	15
Floor To Rim.....inches	32	32	32	32	32	32
Approximate Shipping Weight, less Fittings and Drain Boards.....pounds	130	140	150	165	175	190

*Measurements do not include roll rim, drain boards or boxed back.

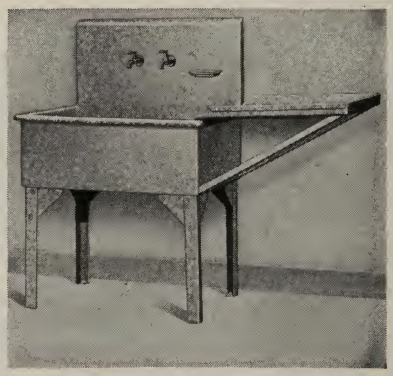
Drain Boards for Sinks Illustrated Above

Length.....inches	24	30	36	†42	†48	†54
Width.....inches	24	24	24	24	24	24
Approx. Ship. Wt., per Pair.....pounds	100	140	170	200	230	260

Drain Boards for Sinks Illustrated at Right

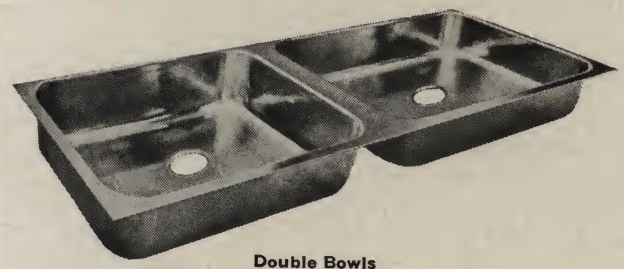
Length.....inches	24	30	36	†42	†48	†54
Width.....inches	24	24	24	24	24	24
Approx. Ship. Wt., Each.....pounds	30	40	50	60	70	80

These sinks can also be manufactured of stainless steel when specified.
†With pipe legs and floor flanges instead of angle braces.



No. 825

Single Bowl



Double Bowls

Whitehead Seamless Monel Flat Rim Bowl with center outlet drilled for 3½-inch strainer.

Constructed of U.S.S. 19-gage monel with rounded corners and coved bottom.

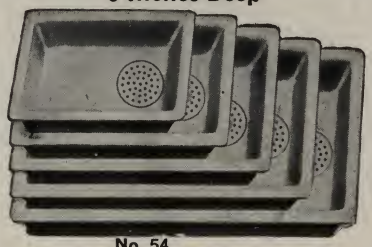
*Double bowls, each bowl being 20x18 inches with a 2-inch partition between.

†Double bowls, each bowl being 25x18 inches with a 2-inch partition between.

	Single Bowl				Double Bowls	
No.....	1820	1820NF	1825	1825NF	*1842	†1852
Size.....in.	20x18	20x18	25x18	25x18	42x18	52x18
Flange..in.	1½	⅝	1½	⅝	1½	1½
Ship.Wt.lb.	16	15	18	17	55	60

Cast Iron Flat Rim Kitchen Sinks

6 Inches Deep



No. 54

Size Inches	Plain Each	Galv. Each	Size Inches	Plain Each	Galv. Each	Size Inches	Plain Each	Galv. Each
12x12	$3.20	$7.18	18x20	$5.80	$13.06	22x40	$11.22	$26.74
12x16	3.48	7.84	18x24	6.10	14.04	22x42	12.54	29.70
12x18	3.64	8.50	18x28	6.82	15.68	22x48	15.18	36.38
12x20	4.36	10.12	18x30	6.60	15.14	24x48	15.84	36.38
14x14	3.92	8.82	18x36	8.58	19.30	24x50	19.80	47.52
14x20	4.36	10.44	20x20	5.14	12.48	18x60	21.12	47.52
14x22	4.64	10.78	20x24	6.34	14.86	20x60	26.40	62.38
14x24	4.94	12.25	20x28	7.12	16.34	20x72	34.32	77.22
16x16	4.64	10.62	20x30	7.92	18.56	24x60	31.68	74.26
16x20	4.94	11.44	20x36	9.76	23.02	24x72	39.60	92.08
16x24	5.52	13.06	20x40	10.56	25.98	24x84	52.80	118.80
16x28	6.10	14.70	20x42	11.22	26.74	24x96	73.92	166.32
16x30	6.54	15.54	20x48	14.00	34.16	24x108	84.48	190.08
18x18	5.24	12.42	22x36	10.56	24.50	24x120	95.04	213.84

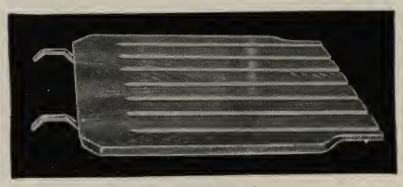
Add for plug strainer, plain 56 cents; galvanized $1.36.
Add for patent overflow, plain, $3.00, galvanized $4.70.

No. P-6805 Enameled Cast Iron Drain Boards

With Wall Support—For Roll Rim Sinks

Lgth. In.	Wdth. In.	Ship. Wt. Lbs.
18	18	45
18	20	50
24	18	55
24	20	65

Hardwood Drain Boards



No. P-7451-A

Hardwood drain board with Chromard metal hooks for use with sink and laundry tray combinations.

No. P-7451-A, for 50-Inch Combination.....each ....
No. P-7451-B, for 42-Inch Combination.....each ....

Enameled Cast Iron Adjustable Sink Legs

No. P-6825

No. P-6823-B

For use under drain boards of 6-inch deep roll rim sinks.
Approx. Ship. Wt., per Pair.....lbs. 22

No. P-6823-C

For use under 6-inch deep apron sinks.
Approx. Ship. Wt. per Pair.....lbs. 20

No. P-6825

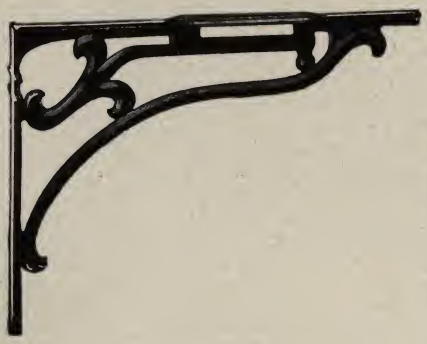
New Style Adjustable Sink Leg with threaded extension providing 4 inches adjustment.

For use under all apron sinks, and sink and tray combinations.
Approx. Ship. Wt. per Pair.....lbs. 16

Sink can be adjusted 32 to 36 inches from floor to top of rim.

All legs are available in regular white, acid-resisting white or colors, and painted only.

No. 154 Swett Adjustable Sink Brackets



All screw holes drilled and countersunk.

No.	Size Inches	Width Sink Inches
0	9½x11½	12 to 15
1	10½x13½	14 " 18
2	12 x16	18 " 23
3	16 x18	18 " 26

No.	Price, per Pair Plain	Galvanized
0	$.70	$1.20
1	.78	1.30
2	.88	1.60
3	1.54	2.66

No. P-6982 Cast Iron Grease Traps

Cast iron grease trap with removable top with swivel bolts.

For domestic use only.

Diameter.inches 16½
Height...inches 13

	2-Inch Soil Pipe Hub	2-Inch Iron Pipe Thread
No. P-6982, Painted All Over.....each	....	....
No. P-6982, Enameled Inside.....each	....	....
No. P-6982, Enameled All Over.....each	....	....
Approximate Shipping Weight. ....pounds	100	100

Josam Grease Interceptors

Will recover the grease from waste water, irrespective of the water temperature, and it is not water jacketed.

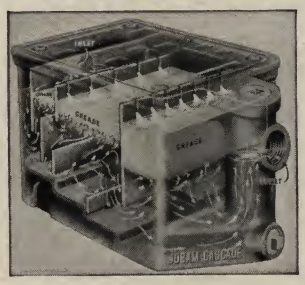
Continuous floor apron design instead of leg supports. Offers a more sanitary and dirt free installation when interceptor is placed on floor.

All sizes up to A-15 furnished with female threaded tapping for iron pipe; the A-25 is with caulked connection; the A-50 for sewer pipe and the A-150 for flange connection. A-O can be furnished with wall brackets at extra cost.

Sizes A-O to A-15 furnished with white enamel finish. Sizes A-25 to A-150 furnished with grey enamel finish.

Size With Visible Double Wall Seal	With Internal Seal	Each	Flow Gals. per Hr.	Fat Cap. Lbs.	Width In.	Ht. In.	Inlet and Outlet In.	Lgth. In.	Wt. Lbs.
A-0	.....	$30.00	250	15	11¼	10½	1½–2	16¼	52
A-1	A-1½	55.00	500	25	13½	12¼	2	19¾	72
A-2	A-2½	116.00	950	50	18¼	19	2–3	27	185
A-3	A-3½	187.00	1500	100	21¾	23½	3–4	32½	360
A-5	A-5½	330.00	2500	150	25¼	27¾	4–5	38¼	539
....	A-15½	504.00	3500	200	29½	33½	4–5	46½	710
....	A-25½	564.00	4000	250	32¾	32¾	6	57¼	825
....	A-50½	876.00	9000	400	41⅞	40	7	55⅜	1650
....	A-75½	1504.00	15000	800	54	48	7	84½	3500
....	A-150½	2746.00	30000	1500	73	54½	8	110 9/16	6500

Series J Josam Cascade Grease Interceptors



The hydraulic principle of grease interception will intercept and retain grease, oil and fat, preventing them from entering waste pipes regardless of water temperature, non-water cooled—solids evacuating—centralized grease retention.

The baffles provide an immediate and complete separation of grease at time of discharge of greasy waste water into interceptor, regardless of flow rate.

Has rectangular shaped body, gasket-tight cover, made of cast iron, painted enamel inside and out.

Either regular or shallow type can be provided with air relief feature. Both types are non-siphoning, either with regulation vent or with the air relief feature.

No.	Each	Flow GPH.	Diam. Inlet and Outlet Inches	Outside Dimen., In. Ht.	Width	Lgth.	Wt. Lb.
*J-000	$15.00	100	1½–2	10	9½	16	38
*J-00	20.00	175	1½–2	10	9½	16	54
J-0	30.00	300	1½–2	12	11¾	17⅞	62
J-1	55.00	600	2	14	12⅜	19¾	85
J-2	78.00	800	2	16¾	15	25⅝	195
J-3	116.00	1000	2–3	17⅜	17	28⅝	260
J-4	187.00	1500	3–4	17¾	21	35	360
J-5	330.00	2500	4–5	18¾	23	38½	465

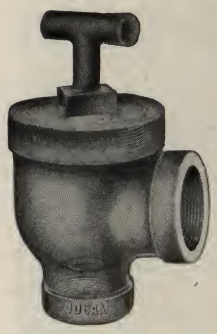
*Furnished integral hub inlet and outlet when desired.

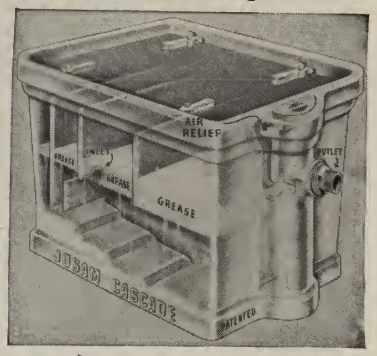
Shallow Type

For use with all sizes of dishwashers, diet, and pot sinks, etc., which can be installed on floor next to dishwashing machine with inlet and outlet sufficiently low so that discharge line from dishwasher to interceptor inlet can be connected without placing interceptor below floor line.

J-3-DW	$126.00	1200	1½–2	12	21	32⅜	242
J-4-DW	197.00	1800	2–3	13	26	42¾	416

No. J4A Josam Perma-Gloss Cascade Grease Interceptors
With No. 170 Flow Control Fitting





Designed to separate grease from waste water with speed and completeness regardless of the temperature of waste water. Has a fat capacity of 50 pounds with a flow of 25 gpm. Proper degree of agitation below grease level retards flow of water to outlet, forcing grease to separate from water and rise to its normal level.

By-pass for air prevents breaking of water seal in trap of interceptor by automatically equalizing the pressure inside and outside of the interceptor.

Complete evacuation of solids is assured by the cascade design, preventing foul odors caused by decomposition.

No cold water connections required. Grease accumulates in grease chambers regardless of water temperature and is easily removed by raising cover of interceptor.

Made of vitreous glazed earthenware. Watertight, gasketed cover prevents escape of gas and odors. Cover is made of hard pressed, treated cellulose fiber board, laminated to provide a minimum thickness of ⅜-inch. All surfaces and edges of cover are primed and coated with a synthetic baking enamel.

Baffles are made of hard pressed cement and asbestos material, impervious to water.

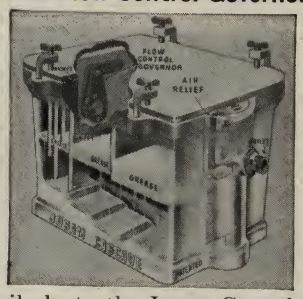
Grease interceptor has 1½-inch spud inlet and 2-inch spud outlet connections.

Flow control fitting is made of cast iron, painted white enamel, with iron pipe tee-handle, removable plug and 1½-inch or 2-inch inlet and outlet connections.

Shipping weight, 225 pounds.

No. J4A, Complete.....each **$149.00**

No. VC2 Josam Ceramic Grease Interceptors
With Flow Control Governor



Designed similarly to the Josam Cascade Grease Interceptor.

Has a fat capacity of 24 pounds with a flow of 12 gpm.

Manually operated flow control governor limits the interceptor to the maximum rate of flow for which it was designed, assuring maximum efficiency of grease interception, retention and evacuation of solids.

Air relief means provides against compressed air within the interceptor, preventing syphonage.

Baffles made of cement and asbestos conforming to government regulations.

Made of vitreous glazed earthenware. Laminated pressed wood cover easily removed for cleaning. Due to design of flow control, the handle must be returned to normal position before cover can be replaced.

Inlet and outlet connections furnished with male threaded iron pipe size spuds.

No. VC2, Shipping Weight 70 Pounds.....each **$72.50**

Type D-4 Josam Sediment and Hair Interceptors

This type is recommended for lavatories in barber shops, beauty parlors, residences, etc. It will prevent clogged pipes by removing all hair and foreign matter from the waste water.

Has cast brass chromium-plated body, size 6½x3¾ inches. Has a 2-inch seal. Inlet connection for 1¼-inch O.D. brass tubing. Outlet is tapped for 1½-inch iron pipe. Removable plug permits accessibility to brass filter screen. Is non-siphoning.

Chromium-Plated, Weight 6 Pounds.....each **$20.00**
Nickel-Plated, Weight 6 Pounds.....each **16.00**

No. C-2 Josam Dental and Surgical Sink Interceptors

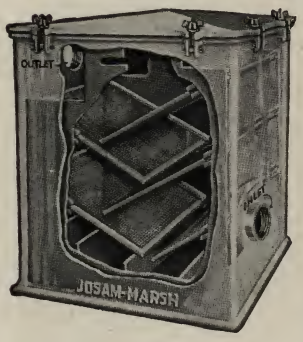
For dental, surgical and operating room sinks, barber shops, beauty parlors, jewelry manufacturers' sinks, for removal and retention of solids, plaster, metals, cotton, hair, etc., from the waste water.

Body is polished aluminum with intercepting screens of brass. Has 3½-inch seal and is non-siphoning. Can be easily cleaned by removal of cage containing screens.

Is 10½ inches high, 5 inches square. Inlets and outlets tapped 1½ inches.

No. C-2 Wt. 8 Lbs.each **$42.00**

C-1 Josam-Marsh Hospital Interceptors
For Hospital Plaster Sinks



This type removes all plaster of Paris, cotton, lint, hair or any other foreign matter from the waste water.

Made of heavy cast iron, white porcelain enamel exterior. Cage is galvanized; screens are brass. Interior is easily accessible as the cage and screens can be easily removed. Is non-siphoning.

Top, 14x14 inches; 16 inches high. Has 2-inch iron pipe inlet and outlet; 7½-inch seal. Wt., 240 lbs.

Type C-1.....each .....

No. 709 Sani-Teed Steel Stands for Wash Trays
Open Brace Pattern

Constructed of 1-inch angles with flat steel braces. Made in all sizes for use with 1, 2 or 3-part trays.

No.	Each	Lgth. In.	Wdth. In.	Ht. In.
2	$2.50	24	15	18
102	2.50	24	17	18
6	2.50	40	15	18
106	2.50	40	17	18
7	3.12	46	15	18
107	3.12	46	17	18
8	3.44	52	15	18
108	3.44	52	17	18
10	3.76	64	15	18
110	3.76	64	17	18

No. 3, for 2-part Trays 12x36 inches.....each **$2.50**

No. P-7500-Q

Alden Enameled Cast Iron Laundry Tray with two compartments, back, and roll rim. Supported on concealed wall hangers and painted adjustable legs.

Fittings, compression swing spout faucet with metal lever handles, and two 1½-inch drain plugs with rubber stoppers and tail-pieces.

Exposed metal chromium-plated.

Length Over All	inches	53¼
Width Over All	inches	25¾
Length Inside, Each Section	inches	23
Front to Back, Inside	inches	21½
Depth Inside	inches	14
Height of Back	inches	8
Floor to Top of Rim, Adjustable	inches	33 to 36
Approx. Shipping Weight, less Fittings	pounds	415

Furnished enameled inside, painted outside.

Furnished regular white and acid resisting white enamel.

No. P-7510-B

Four-Way Enameled Cast Iron Laundry Tray with two compartments and roll rim, painted outside. Supported on painted angle iron frame.

Fittings, four-valve swinging spout faucet with hot and cold valves for tray and hot and cold valves for hose connection to washing machine, and two 1½-inch drain plugs with rubber stoppers and tail-pieces.

Length Over All, Two Sections	inches	50¾
Width Over All	inches	26½
Length Inside, Each Section	inches	22
Front to Back Inside	inches	22
Depth Inside	inches	14
Approximate Shipping Weight	pounds	368

Furnished in regular white or acid-resisting white enamel.

No. P-7520-F

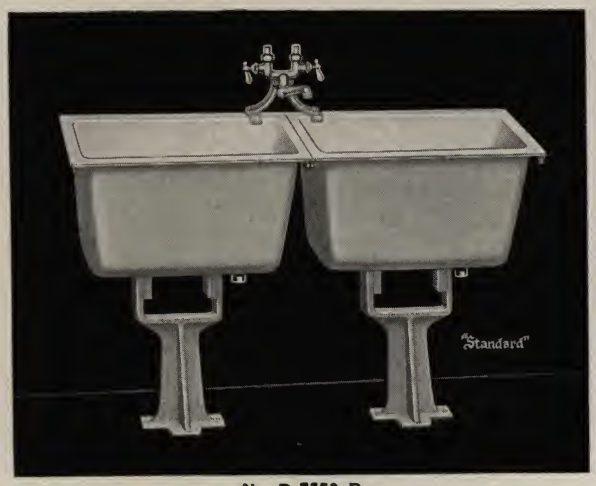
Revere Enameled Cast Iron Laundry Trays, two sections, with back and roll rim, painted outside. Supported on painted adjustable pedestals.

Fittings, four ½-inch compression faucets with metal cross handles and two 1½-inch drain plugs with rubber stoppers and tail-pieces.

Exposed metal chromium plated.

Length Over All, Each Section	inches	28
Width Over All	inches	26
Length Inside, Each Section	inches	23
Front to Back, Inside	inches	22
Depth Inside	inches	14¼
Height of Back	inches	8
Floor to Top of Rim, Adjustable	inches	31 to 34
Approximate Shipping Weight, Each Section, Less Fittings	pounds	210

Furnished in regular white or acid-resisting white enamel.



No. P-7550-B

Hanover Enameled Cast Iron Laundry Trays, two sections, with flat rim, painted outside. Supported on painted adjustable pedestals.

Fittings, compression swing spout faucet with metal lever handles, faucet bracket, and two 1½-inch drain plugs with rubber stoppers and tail-pieces.

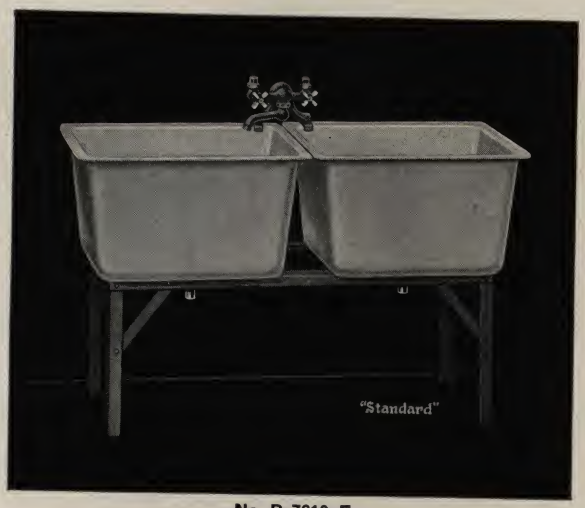
Traps, not furnished.

Exposed metal chromium plated.

Length Over All, Two Sections	inches	51
Width Over All	inches	25½
Length Inside, Each Section	inches	23¼
Front to Back, Inside	inches	21½
Depth Inside	inches	14¼
Floor to Top of Rim, Adjustable	inches	31 to 34
Approx. Ship. Wt., Each Section, Less Fittings	lb.	155

Ends of trays are ground for bolting sections together.

Furnished in regular white or acid-resisting white enamel.



No. P-7610-F

Twin Lakes Enameled Cast Iron Laundry Trays, two sections, with flat rim, painted outside. Supported on black angle iron frame.

Fittings, compression swing spout faucet with metal cross handles, tray faucet bracket, and two 1½-inch drain plugs with rubber stoppers and tail-pieces.

Length Over All, Two Sections	inches	48
Width Over All	inches	20
Length Inside, Each Section	inches	21¼
Front to Back Inside	inches	17¼
Depth Inside	inches	13½
Height from Floor	inches	32
Approximate Shipping Weight	inches	225

Furnished in regular white and acid resisting white enamel.

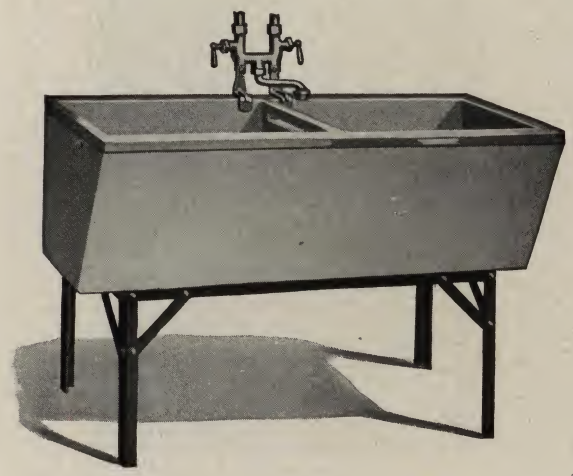
No. 200

Shelfon Laundry Tray, cast in one piece with 6-inch integral shelf with 2 depressed soap dishes. Permanent rustless metallic washboard is cast in left hand compartment.

Supported on enameled steel stand. Stand has lightning levelers, permitting rapid, easy leveling of tray on sloping floor.

Furnished with threaded twin drain connection, moulding type round cornered metallic rim, brass strainers and rubber plugs. Polished stainless steel rim and washboard can be furnished at additional cost.

No.	100	200	300
No. of Compartments	1	2	3
Length ... inches	25	48	72
Width ... inches	24	24	24
Depth ... inches	16	16	16
Weight ... pounds	200	400	600



Cement Laundry Tray, integrally cast in one piece, with metallic rim and wringer guards, brass strainers, rubber plugs and supported on painted steel frame.

Twin waste connection is furnished for two-part trays.

All trays have faucet holes partly drilled.

No. of Compartments	1	2	3
Size ... inches	24x24	24x48	24x72
Approximate Shipping Weight, with 6-Inch Back ... pounds	250	425	600

No. 104

Alberene Stone Laundry Tray without back, drilled for drain connection and faucets, supported on steel frame, fitted with finished brass drain plugs and stoppers.

Single tray can be drilled for center, right or left-hand drain connection. Also furnished without faucet drillings if desired.

	No. 101, 1-Part		No. 104, 2-Part						No. 108, 3-Part	
Length ... inches	24	24	42	42	42	44	48	48	72	72
Width ... inches	24	24	22	24	24	24	24	24	24	24
Depth ... inches	14	16	14	14	16	16	14	16	14	16
Approx. Ship. Wt. ... pounds	230	240	310	340	350	410	430	450	600	635

Faucets and drain connections extra.

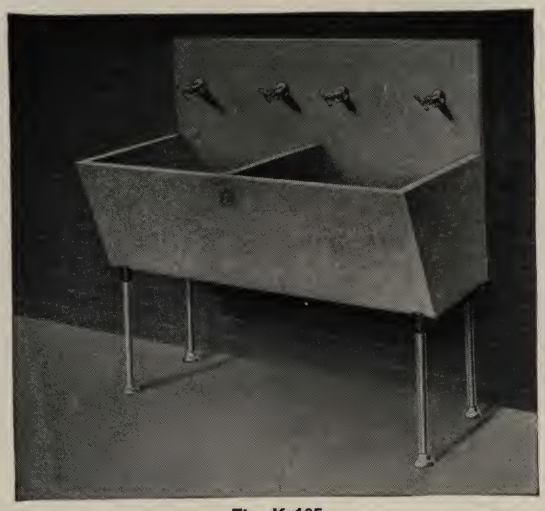


Fig. K-105

Alberene Stone Two-Part Laundry Tray, with 9-inch back, drilled for faucets and drain connection, supported on two iron legs, painted or galvanized, with galvanized soap dish, brass drain plugs and stoppers.

Length	inches	42	44	48	48
Width	inches	22	24	24	24
Depth	inches	14	16	14	16
Shipping Weight	pounds	350	465	498	515

Can be drilled for right hand, left hand, center drain or for twin drain connection.

No. P-7705-A, with Rim Guard
No. P-7700-A, without Rim Guard

Argo Enameled Cast Iron Roll Rim Service Sink with back, roll rim, and metal rim guard. Painted outside. Supported on adjustable trap standard and concealed wall hanger.

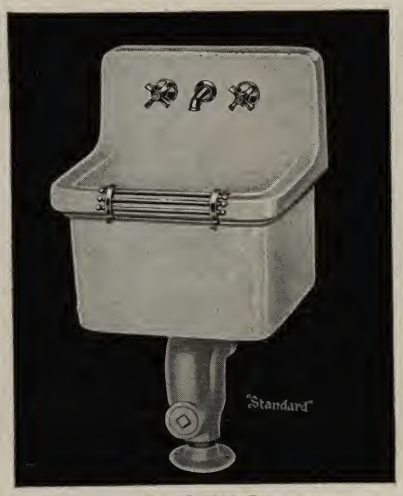
Fittings, all-metal compression combination supply with renewable units, hose end spout with bucket hook, lever handles, ½-inch I. P. size union couplings with adjustable flanges, and drain plug with metal grid.

Trap, enameled inside adjustable standard with cleanout and outlet for 3-inch iron pipe.

Exposed metal chromium plated.

Nominal Size	inches	20x16	22x18	22x20	24x20
Height Back	inches	12	12	12	12
Depth of Sink	inches	12¼	12¼	12¼	12¼
Approx. Ship. Wt., Less Fittings	pounds	113	133	137	151

Furnished in regular white or acid-resisting white enamel.



No. F-7650-R

Ardmore Vitreous China Service Sink with back and metal rim guard. Supported on adjustable trap standard and concealed wall hanger.

Fittings, all-metal compression combination supply with renewable units, cross handles, nozzle, and drain plug with metal grid.

Trap, enameled inside adjustable standard with cleanout and outlet for 3-inch iron pipe.

Exposed metal chromium plated.

Nominal Size	inches	20x16	22x19	24x22
Height Back	inches	8	10	12
Depth of Sink	inches	10	12	12
Approx. Ship. Wt., Less Fittings	pounds	100	128	150

Furnished in white only.

No. F-7660-N

Arkana Vitreous China Roll Rim Service Sink with metal rim guard. Supported on adjustable trap standard.

Fittings, all-metal built-in compression combination supply with renewable units, cross handles, nozzle with bucket hook and wall brace, and drain plug with metal grid.

Trap, enameled inside adjustable standard with cleanout and outlet for 3-inch iron pipe.

Exposed metal chromium plated.

Nominal Size	inches	22x20
Depth Inside	inches	11½
Approx. Ship. Wt., Less Fittings	pounds	98

Furnished in white only.

No. P-7720-B

Arcade Enameled Cast Iron Roll Rim Service Sink with roll rim, painted outside. Supported on trap standard.

Fittings, all-metal compression combination supply with renewable units, lever handles, nozzle, bucket hook, bottom wall brace, and drain plug with metal grid.

Trap, enameled inside standard with cleanout and outlet for 3-inch lead pipe.

Exposed metal chromium plated.

Nominal Size.....inches	20x16	22x18	22x20	24x20
Depth of Sink.....inches	12	12	12	12
Approx. Ship. Wt., Less Fittings.....pounds	70	80	85	90

Furnished in regular white or acid-resisting white enamel.

No. P-7710-E, without Rim Guard
No. P-7715-E, with Rim Guard

Argo Enameled Cast Iron Roll Rim Service Sink with back and roll rim, painted outside. Supported on trap standard and concealed wall hanger.

Fittings, two ½-inch compression faucets with metal tee handles and drain plug with metal grid.

Trap, enameled inside standard with cleanout and outlet for 3-inch lead pipe.

Exposed metal chromium plated.

Nominal Size.....inches	20x16	22x18	22x20	24x20
Height Back.....inches	12	12	12	12
Depth of Sink.....inches	12¼	12¼	12¼	12¼
Approx. Shipping Weight, less Fittings.....pounds	158	178	182	196

Furnished in regular white or acid-resisting white enamel.

No. P-7760

Arch Enameled Cast Iron Flat Rim Service Sink with center outlet, painted outside.

Fittings, 1½-inch drain plug with metal grid and tailpiece.

Size Inches	Weight Pounds	Size Inches	Weight Pounds
16x16x10	40	24x20x12	75
20x14x12	50	30x20x12	100
20x16x12	60	36x20x12	130
24x18x12	70	.....	...

Furnished in regular white or acid-resisting white enamel.

No. B-2056 Rim Guards
For Enameled Service Sinks

Bar type rim guard with plain ends for front rim.

Chromard finish.

No. B-2056....each .....

When ordering, specify size and number of sink on which the rim guard is to be used.

Cast Iron Service Sink Trap Standards

No. P-7780

No. P-7780

S trap standard with vent, spigot end for 3-inch cast iron pipe, brass cleanout plug, and 2-inch brass tubing nipple to wall.

No. P-7781

Same as No. P-7780 except for 3-inch lead pipe connection.

	No. P-7780 For C.I. Pipe	No. P-7781 For Lead Pipe
Enameled Inside, Painted Outside.each	.....	.....
Enameled Inside and Outside.....each	.....	.....

Can be furnished with large flange for supporting vitreous china fixtures. Add suffix letter L.

Furnished in regular white or acid-resisting white enamel.

No. P-7782 Cast Iron Service Sink Trap Standards

S trap standard with spigot end for 3-inch soil pipe, and brass cleanout plug.

No. P-7782, Enameled Inside, Painted Outside..each .....
No. P-7782, Enameled Inside and Outside.....each .....

Can be furnished with large flange for supporting vitreous china fixtures. Add suffix letter "L."

Furnished in regular white or acid-resisting white enamel.

No. P-7783 Cast Iron Service Sink Trap Standards

Loose Pin

S trap standard with outlet for 3-inch lead pipe connection and with brass cleanout plug.

No. P-7783, Enameled Inside, Painted Outside .....each ....
No. P-7783, Enameled Inside and Outside..each ....

Can be furnished with large flange for supporting vitreous china fixtures. Add suffix letter L.

Furnished in regular white or acid-resisting white enamel.

No. P-7798 Cast Iron Service Sink Trap Standards

Adjustable

Adjustable P trap standard, tapped for iron pipe, with brass cleanout plug.

Size Outlet.....inches	2	3
No. P-7798, Enameled Inside, Painted Outside.ea.	....	....
No. P-7798, Enameled Inside and Outside...each	....	....

Furnished in regular white or acid-resisting white enamel.

Can be furnished with large flange for supporting vitreous china fixtures. Add suffix letter "L."

No. P-8500-E

Carnegie Enameled Cast Iron Wash Sink with back and roll rim. Supported on concealed brackets.

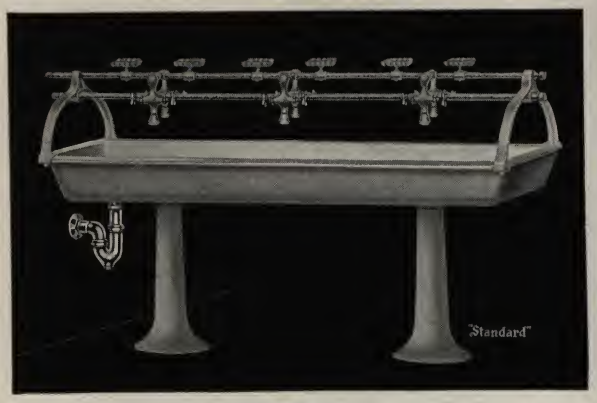
Fittings, two ½-inch compression combination wash sink faucets with cross handles, 1 soap dish, and 1½-inch metal grid strainer with coupling nut and tailpiece.

Trap, 1½-inch P pattern with metal wall flange.

Length.....feet	3	4	5	6
No. of Faucets.....	2	2	3	3
No. of Soap Dishes.....	1	1	2	2
Width Over All.....inches	18	18	18	18
Height of Back.....inches	8	8	8	8
Approx. Shipping Weight.....pounds	159	200	245	276

Furnished enameled inside, painted outside.

Furnished in regular white and acid-resisting white enamel.



No. P-8520-C

Crucible Enameled Cast Iron Wash Sink with flat rim, painted outside, and painted pipe supports over center of sink. Supported on painted pedestals.

Fittings, six ½-inch compression double wash sink faucets with sprays, renewable units, and metal cross handles, six soap dishes, and 1½-inch drain plug with metal grid and tailpiece.

Trap, 1½-inch P pattern with metal wall flange.

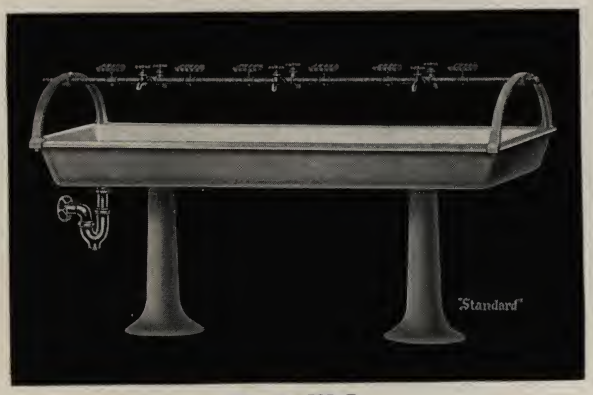
Length.....feet	4	5	6
Number of Faucets and Soap Dishes.....	4	6	6
Width Over All.....inches	24	24	24
*Height from Floor to Top of Rim...inches	31	31	31
Approx. Shipping Weight.....pounds	250	275	335

Supply pipes are not furnished.

*Pedestals can be furnished to set rim 24, 29, or 34 inches from floor.

Can be furnished with enameled pedestals at extra cost.

Furnished in regular white enamel only.



No. P-8525-F

Crucible Enameled Cast Iron Wash Sink with flat rim, painted outside, and painted supports with supply pipe over center of sink. Supported on painted pedestals.

Fittings, six ½-inch compression faucets with metal tee handles, six soap dishes, and 1½-inch drain plug with metal grid and tailpiece.

Trap, 1½-inch P pattern with metal wall flange.

Length.....feet	4	5	6
Number of Faucets and Soap Dishes.....	4	6	6
Width Over All.....inches	24	24	24
*Height from Floor to Top of Rim...inches	31	31	31
Approximate Shipping Weight.....pounds	250	275	335

¾-inch supply pipes are not furnished.

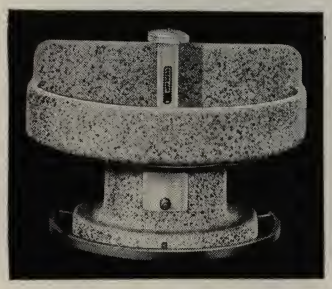
*Pedestals can be furnished to set rim 24, 29, or 34 inches from floor.

Can be furnished with enameled pedestals at extra cost.

Furnished in regular white enamel only.

Type AFA, 54-Inch Diameter Circular, Precast Stone Foot-Controlled, Eight to Ten Users

Type BHA, 36-Inch Diameter Circular, Precast Stone Hand-Controlled, Five to Six Users



Type CFA, 54-Inch Diameter Semi-Circular, Precast Marble Foot-Controlled, Five to Six Users

Bradley Washfountains are compact, self-contained fixtures, expressly designed for the group washing requirements of industrial plants, schools, and institutions of all kinds.

Materials

Washfountains are available in the following materials: Precast Marble or Stone. Composed basically of approximately 85% marble or stone and 15% binder; effectively reinforced and scientifically impregnated; highly resistant to wear and to the action of ordinary cleaning agents.

Types and Sizes

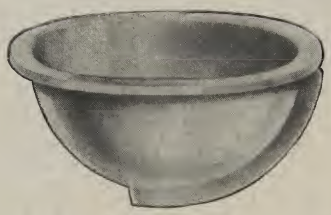
The fountains are available in hand-controlled and foot-controlled models, in circular and semi-circular designs, with water supply and vent connections from above or below. There are two standard sizes, 54- and 36-inch diameters, having capacities of three, six, and ten simultaneous users.

Equipment

Standard equipment includes Bradley manually-operated mixing valve and trap. Soap dispensers at extra cost.

Earthenware Round Wash Basins

With Patent Overflow for Metal Plug



No. 150

Outside Diameter....inches	12	13	14	15	16
With Patent Overflow...ea.	....	....	....	....	....

Earthenware Round Basins

No Overflow—Metal Plug

No. 160

O.D.....inches	12	13	14	15	16
Each.....	....	....	....	....	....

Earthenware Oval Wash Basins

With Patent Overflow for Metal Plug

No. 155

Outside Dimensions.....inches	14x17	15x19	16x21
With Patent Overflow.....each	.....	.....	.....

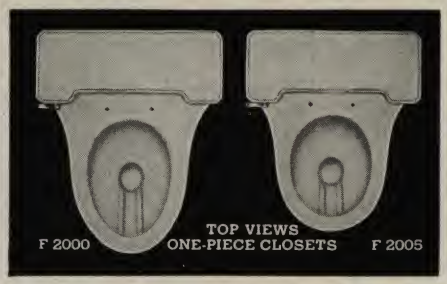
Earthenware Oval Wash Basins

Metal Plug—Without Patent Overflow

No. 165

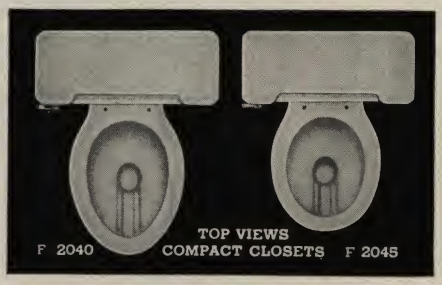
Outside Dimension.....inches	14x17	15x19	16x21
Price.....each	.....	.....	.....

Quality Construction and Advanced Design of "Standard" Water-Closets



One-Piece Closet—Showing Principal Difference in Bowl Design—Elongated Opening Gives Utmost Sanitation—Elongated Opening is 15x10 Inches—Regular Style is 13x10 Inches

"Standard" Water-Closets are made of genuine vitreous china, are straight, strong, and true. They are made by latest scientific methods which assures ample wall thickness throughout; they have a uniformity in size of waste channel (an important requirement), and are truly vitrified fixtures, impervious to soil, with a smooth hard glaze that will not crack or craze.



Compact Closet—Showing Principal Difference In Bowl Design—Elongated Opening Gives Utmost Sanitation—Elongated Opening is 15x10 Inches—Regular Style is 13x10 Inches

For many years "Standard" has offered water-closets that have been leaders in every feature—sanitation, long life, design, positive flushing action, variety and suitability for all purposes.

Then, owners insisted on a further specification in addition to all these—compact and unit design. Residential water-closets need to be unobtrusively of good appearance. Bathrooms have advanced in room design and arrangement, tubs and lavatories in beauty—and so "Standard" provided the water-closet that has every essential and completes the perfect ensemble for every bathroom—the One-Piece Closet.

The One-Piece and Master One-Piece Closets are made with tank and bowl in one piece, with a variety of seats, and they employ a new flushing action, the syphon vortex which is quiet and thorough in action. The fittings, assure proper flush with the least amount of water. Notice in cross sections, the uniform wall thicknesses, the even unobstructed bore of the waste channel and the large water area, covering the bowl under the entire seat opening.

The general appearance of the Master One-Piece is more massive than the One-Piece, thereby making it more adaptable for larger bathrooms. Either will add to the appearance of the new or remodeled bathroom.

No. F-2000-A

Master One-Piece Syphon Vortex Closet Combination

Bowl and tank in one piece. Bowl, syphon vortex action type, elongated pattern with integral supply to flushing rim. Tank, 4 to 5-gallon capacity, with shelf top lid.

Fittings, special float valve, flush valve, single action flush lever with metal handle, two closet screws, and four china bolt covers. Supply pipe, ⅜-inch I.P. size to floor with stop, metal, cross handle, and escutcheon.

Seat, white sheet covered, with extended closed front, cover, and concealed bar hinge with metal hinge posts.

In white or colors. Exposed metal chromium plated.

Back of Tank to Center of Outlet.....inches 11¼
Back of Tank to Front of Bowl.....inches 28¼
Approximate Shipping Weight, with Seat.....pounds 145

Seat Variations

No. F-2000-B, white sheet covered, with open front, cover, and concealed bar hinge with metal hinge posts.

No. F-2000-C, white sheet covered, with open front, less cover, and with metal check hinge.

No. F-2000-D, black hard rubber, with open front, less cover, and with black check hinge.

No. F-2005-A

One-Piece Syphon Vortex Closet Combination

Bowl and tank in one piece. Bowl, syphon vortex action type, regular pattern with integral supply to flushing rim. Tank, 4 to 5-gallon capacity, with shelf top lid.

Fittings, special float valve, flush valve, single action flush lever with metal handle, two closet screws, and four china bolt covers. Supply pipe, ⅜-inch I.P. size to floor with stop, metal cross handle, and escutcheon.

Seat, white sheet covered, with closed front, tail back, cover, and concealed bar hinge with metal hinge posts.

In white or colors. Exposed metal chromium plated.

Back of Tank to Center of Outlet.....inches 10¾
Back of Tank to Front of Bowl.....inches 25½
Approximate Shipping Weight, with Seat.....pounds 125

Seat Variations

No. F-2005-B, white sheet covered, with open front, cover, and concealed bar hinge with metal hinge posts.

No. F-2005-C, white sheet covered, with open front, less cover, and with metal check hinge.

No. F-2005-D, black hard rubber with open front, less cover, and with black check hinge.

No. F-2040

Elongated Compact Syphon Vortex Close Coupled Closet Combination

Bowl, vitreous china, elongated pattern, with syphon vortex action and extended rear shelf.

Tank, vitreous china, recessed panel front, 5-gallon capacity, with shelf top lid. Supported on shelf of bowl.

Fittings, elevated float valve, flush valve, single action flush lever with metal handle, two closet screws, and four china bolt covers.

Supply pipe, ⅜-inch I.P. size to floor with straight stop, metal cross handle, and escutcheon.

Seat, white sheet covered, with extended closed front, cover, and metal hinge.

Exposed metal chromium plated.

Wall to Center of Outlet.....inches 11¾
Wall to Front of Bowl.....inches 29
Approximate Shipping Weight.....pounds 114

Furnished in white or colors.

No. F-2045

Compact Syphon Vortex Close Coupled Closet Combination

Bowl, vitreous china, round front pattern, with syphon vortex action and extended rear shelf.

Tank, vitreous china, recessed panel front, 5-gallon capacity, with shelf top lid. Supported on shelf of bowl.

Fittings, elevated float valve, flush valve, single action flush lever with metal handle, two closet screws, and four china bolt covers.

Supply pipe, ⅜-inch. I.P. size to floor with straight stop, metal cross handle, and escutcheon.

Seat, white sheet covered, with closed front, tail back, cover, and concealed bar hinge with metal hinge posts.

Exposed metal chromium plated.

Back of Tank to Center of Outlet.....inches 11½
Back of Tank to Front of Bowl.....inches 26¾
Approximate Shipping Weight, with Seat.....pounds 112

Furnished in white or colors.

No. F-2100

Cadet Syphon Action Reverse Trap Close Coupled Closet Combination

Bowl, vitreous china, syphon action reverse trap type, regular pattern, with self-draining jet and extended rear shelf.

Tank, vitreous china, 6-gallon capacity, with shelf top lid. Supported on shelf of bowl.

Fittings, elevated float valve, flush valve, single action flush lever with metal handle, tank coupling, two closet screws, and four china bolt caps.

Supply pipe, ⅜-inch I.P. size to floor with straight stop, metal cross handle, and escutcheon.

Seat, white sheet covered, with tail back, closed front, cover, and concealed hinge.

Exposed metal chromium plated.

Back of Tank to Center of Outlet.....inches 11¼
Back of Tank to Front of Bowl.....inches 26⅜
Approximate Shipping Weight, with Seat.....pounds 108

Furnished in white or colors.

No. F-2115

Compton Syphon Action Wash-Down Close Coupled Closet Combination

Bowl, vitreous china, syphon action wash down type, regular pattern, with jet and extended rear shelf.

Tank, vitreous china, 6-gallon capacity, with shelf top lid. Supported on shelf of bowl.

Fittings, elevated float valve, flush valve, single action flush lever with metal handle, two closet screws, and four china bolt caps.

Supply pipe, ⅜-inch I.P. size to floor with straight stop, metal cross handle, and escutcheon.

Seat, white sheet covered, with closed front, cover, and concealed bar hinge with metal hinge posts.

Back of Tank to Center of Outlet.....inches 11¼
Back of Tank to Front of Bowl.....inches 26⅜
Approximate Shipping Weight, with Seat...pounds 121

No. F-2143

Madbrook Syphon Action Reverse Trap Closet Combination

Bowl, vitreous china, syphon action type, elongated pattern, with concealed jet, back supply inlet. Two china bolt caps.

Tank, vitreous china, 6-gallon capacity, with depressed lid. Supported on wall screws.

Fittings, bottom supply float valve, metal handle trip lever, flush valve, and elbow flush connection.

Supply pipe, ⅜-inch I.P. size to wall with angle stop.

Seat, white sheet covered with open front, cover, and cast brass bar hinge.

Exposed metal chromium plated.

Wall to Center of Outlet	inches	12
Wall to Front of Bowl	inches	29¼
Approximate Shipping Weight	pounds	130

Furnished in white or colors.

No. F-2186

Modernus Wash-Down Closet Combination

Bowl, vitreous china, regular pattern, with jet, straight front, and rear supply inlet.

Tank, vitreous china, 6-gallon capacity, with depressed lid. Supported on wall screws.

Fittings, bottom supply float valve, flush valve, single action flush lever with metal handle, elbow flush connection and china bolt caps.

Supply pipe, ⅜-inch I.P. size to floor with escutcheon.

Seat, white sheet covered with closed front, cover, and cast brass bar hinge.

Exposed metal chromium plated.

Approximate Shipping Weight	pounds	132

Furnished white or colored.

No. F-2180

Siacto Syphon Action Reverse Trap Closet Combination

Bowl, vitreous china, syphon action type, round front pattern, with concealed jet, back supply inlet. Two china bolt caps.

Tank, vitreous china, 6-gallon capacity, with depressed lid. Supported on wall screws.

Fittings, bottom supply float valve, metal handle trip lever, flush valve, and elbow flush connection.

Supply pipe, ⅜-inch I.P. size to floor, with flange.

Seat, white sheet covered with closed front, cover, and cast brass bar hinge.

Exposed metal chromium plated.

Wall to Center of Outlet	inches	12
Wall to Front of Bowl	inches	27¼
Approximate Shipping Weight	pounds	130

Furnished in white or colors.

No. F-2203-VS

Purimo Syphon Jet Closet Combination

Bowl, vitreous china, syphon jet type, extended front and cut out back pattern, with concealed jet and top supply inlet.

Fittings, flush valve with vacuum breaker, side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch straight flush connection, wall and spud flanges. Two china bolt caps.

Seat, black hard rubber with open front and back, and covered check hinge.

Exposed metal chromium plated.

Center of Spud to Center of Outlet	inches	7½
Wall to Front of Bowl	inches	28½
Width Over All	inches	13¾
Approximate Shipping Weight, Bowl Only	pounds	65

To order closet bowl only with 1½-inch spud, omit suffix letters from number.

Furnished in white or colors.

No. F-2223-VS, Madera
No. F-2233-VS, Madera Junior

Madera Syphon Jet Closet Combination

Bowl, vitreous china, syphon jet type, elongated pattern, with concealed jet and top supply inlet.

Fittings, flush valve with vacuum breaker, side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch straight flush connection, wall and spud flanges, and two china bolt covers.

Seat, black hard rubber, with extended open front, less cover, and with black check hinge.

Exposed metal chromium plated.

		Madera	Madera Junior
Center of Spud to Center of Outlet	inches	6	6
Height, Floor to Rim	inches	15	13
Wall to Front of Bowl	inches	27	27
Width Overall	inches	14	14
Approx. Shipping Weight, Bowl Only	pounds	66	63

To order bowl only with 1½-inch spud, omit suffix letters from number.

Furnished in white or colors.

No. F-2243-VS, Devoro
No. F-2253-VS, Devoro Junior

Devoro Syphon Jet Closet Combination

Bowl, vitreous china, syphon yet type, round front pattern, with concealed jet and top supply inlet.

Fittings, flush valve with vacuum breaker, side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch straight flush connection, wall and spud flanges, and two china bolt covers.

Seat, black hard rubber, with open front, less cover, and with black check hinge.

Exposed metal chromium plated.

		Devoro	Devoro Junior
Center of Spud to Center of Outlet	inches	6	6
Height, Floor to Rim	inches	15	13
Wall to Front of Bowl	inches	25	25
Width Overall	inches	14	14
Approx. Ship. Wt., Bowl Only	pounds	65	62

To order closet bowl only with 1½-inch spud, omit suffix letters from number.

Furnished in white or colors.

No. F-2442-VS

Siacto Syphon Action Closet Combination

Bowl, vitreous china, syphon action type, round front pattern, with concealed jet and back supply inlet.

Fittings, flush valve with vacuum breaker, side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1¼-inch elbow flush connection, wall and spud flanges, and two china bolt caps.

Seat, black hard rubber, with open front, less cover, and with black check hinge.

Exposed metal chromium plated.

Face of Spud to Center of Outlet	inches	3⅞
Wall to Front of Bowl	inches	25¼
Width Overall	inches	14
Approximate Shipping Weight, Bowl Only	pounds	50

To order closet bowl only with 1½-inch spud, omit suffix letters from number.

Furnished in white or colors.

No. F-2244-VS, Devoro
No. F-2254-VS, Devoro Junior

Devoro Syphon Jet Closet Combination

Bowl, vitreous china, syphon jet type, regular pattern, with concealed jet, top supply inlet, and raised rear vent.

Fittings, flush valve with vacuum breaker, side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch straight flush connection, wall and spud flanges, china vent escutcheon, and four china bolt caps.

Seat, black hard rubber, with open front, less cover, and with black check hinge.

Exposed metal chromium plated.

		Devoro	Devoro Junior
Center of Spud to Center of Outlet	inches	7½	7½
Height, Floor to Rim	inches	15	13
Wall to Front of Bowl	inches	27½	27½
Width Overall	inches	14	14
Height Overall	inches	30½	28½
Approx. Ship. Wt., Bowl Only	pounds	89	84

To order closet bowl only with 1½-inch spud, omit suffix letters from number.

Furnished in white or colors.

No. F-2273-VS, Round Front Bowl
No. F-2271-VS, Extended Lip Bowl

Devoro Baby Syphon Jet Closet Combination

Bowl, vitreous china, syphon jet type, with jet and top supply inlet.

Fittings, flush valve with vacuum breaker, side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch straight flush connection, wall and spud flanges. Two china bolt caps.

Seat, white sheet covered with closed front, less cover, and with check hinge.

Exposed metal chromium plated.

	Round Front	Extend. Lip
Center of Spud to Center of Outlet..inches	6	6
Wall to Front of Bowl.....inches	26	....
Height of Bowl.....inches	10	10
Width Over All.....inches	12½	12½
Approx. Shipping Weight, Bowl Only...lb.	52	....

To order closet bowl only with 1½-inch spud, omit suffix letters from number.

Furnished in white or colors.

No. F-2489-VS

Glenco Syphon Jet Closet Combination

Bowl, vitreous china, wall hung, syphon jet type, elongated pattern, with back supply inlet. Furnished with wall support.

Fittings, concealed flush valve with vacuum breaker, side inlet, 1-inch ground joint union, straight stop, metal oscillating handle through wall, 1½-inch elbow flush connection. Bolts, bolt caps and washers.

Seat, black hard rubber, with elongated open front, less cover, and with black check hinge.

Exposed metal chromium plated.

Wall to Front of Bowl.....inches	25
Width Overall.....inches	18½
Height Overall.....inches	23½
Approximate Shipping Weight Bowl Only.....pounds	65

Designed for valve operation. Working pressure should be not less than 10 pounds at the bowl.

To order closet bowl only with 1½-inch spud, omit suffix letters from numbers.

Furnished in white or colors.

No. F-2469-VS

Modernus Syphon Action Wash Down Closet Combination

Bowl, vitreous china syphon action wash down type, round front pattern, straight front, with jet and back supply inlet.

Fittings, flush valve with vacuum breaker, side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch elbow flush connection, and wall and spud flanges. China bolt caps and two closet screws.

Seat, black hard rubber, with open front, less cover, and with black check hinge.

Exposed metal chromium plated.

Face of Spud to Center of Outlet.....inches	6⅜
Wall to Front of Bowl.....inches	26¼
Width Overall.....inches	14
Approximate Shipping Weight, Bowl Only.....pounds	40

To order closet bowl only with 1½-inch spud, omit suffix letters from number.

Furnished in white or colors.

No. F-2490-VS

Glenco Syphon Jet Closet Combination

Bowl, vitreous china, wall hung, syphon jet type, elongated pattern, with top supply inlet. Furnished with wall support.

Fittings, flush valve with vacuum breaker, side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch straight flush connection, wall and spud flanges. Bolts, bolt caps, and washers.

Seat, black hard rubber, with elongated open front, less cover, and with black check hinge.

Wall to Front of Bowl.....inches	25
Width Overall.....inches	14
Height Overall.....inches	26
Approximate Shipping Weight, Bowl Only.....pounds	68

Designed for valve operation. Working pressure should not be less than 10 pounds at the bowl.

Not arranged for seat with cover.

To order closet bowl only with 1½-inch spud, omit suffix letters from number.

Furnished in white or colors.

No. F-2493-V

Glenco Syphon Jet Closet Combination

Bowl, vitreous china, wall hung, elongated pattern with integral seat, concealed jet and back supply inlet. Furnished with wall support.

Fittings, concealed flush valve with vacuum breaker, side inlet, 1-inch ground joint union straight stop, metal oscillating handle through wall, 1½-inch elbow flush connection. Bolts, bolt caps, and washers.

Exposed metal chromium plated.

Wall to Front of Bowl	inches	24¾
Width Over all	inches	18½
Height Over All	inches	23½
Approx. Ship. Wt., Bowl Only	pounds	70

Designed for use with direct pressure flush valve only. The working pressure for successful operation should be not less than 10 pounds at the bowl.

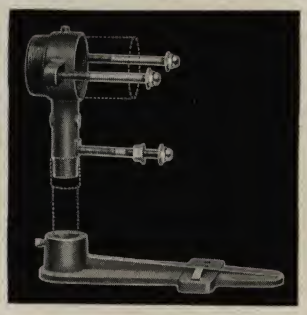
To order closet bowl only with 1½-inch spud, omit suffix letters from number.

Furnished in white only.

Standard Wall Closet Supports

For Instanto Blow-Out Type Wall Closets

No. 2 for Iron Pipe—With Foot



Extra heavy cast iron wall closet support furnished with tension bolts and compression bolt, Chromard nuts, washers, and asbestos gasket.

The lower or compression bolt together with the pipe extension to floor and cast iron foot constitute a patented cantilever principle by which all strain upon partition or threaded water fittings is eliminated. A gas and water-tight connection between closet and soil system is insured.

Blue prints showing methods of installation furnished on request.

The 1½-inch iron pipe extension nipple with coupling not furnished.

No. 1 for Iron Pipe—Without Foot

Same as No. 2 except less cast iron foot. The support is arranged for use with a ¾-inch iron pipe extension with round flange for floor rest.

Pipe extension and flange not furnished.

No. 4 for Lead Pipe—With Foot

Same as No. 2 except arranged for use with lead pipe.

No. F-2510-VS

Instanto Blow-Out Closet Combination

Bowl, vitreous china, wall hung, blow-out type, elongated pattern, with concealed jet and top supply inlet. Furnished with wall closet support.

Fittings, flush valve with vacuum breaker, side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch straight flush connection, and wall and spud flanges. Bolts, bolt caps, and washers.

Seat, black hard rubber, with extended open front, less cover, and with black check hinge.

Exposed metal chromium plated.

Wall to Front of Bowl	inches	26
Width Overall	inches	14
Height Overall	inches	26
Approximate Shipping Weight, Bowl Only	pounds	60

Designed for use with direct pressure flush valve only. Working pressure should be not less than 20 pounds at bowl.

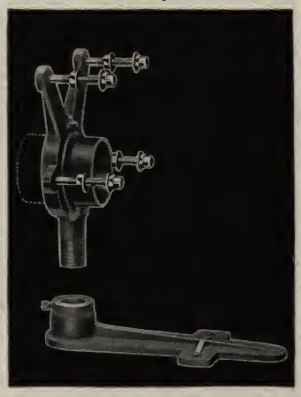
To order closet bowl only with 1½-inch spud, omit suffix letters from number.

Furnished in white or colors.

Standard Wall Closet Supports

For Glenco Syphon Jet Type Wall Closets

No. 6 for Iron Pipe—With Foot



Extra heavy cast iron wall closet support furnished with sleeve, cast iron flanged tension bolts and compression bolts, Chromard nuts, washers, and asbestos gasket.

The lower or compression bolts together with the pipe extension to floor and cast iron foot constitute a patented cantilever principle by which all strain upon partition or threaded water fittings is eliminated. A gas and water-tight connection between closet and soil system is insured.

Blue prints showing methods of installation furnished on request.

The 1½-inch iron pipe extension nipple not furnished.

No. 5 for Iron Pipe—Without Foot

Same as No. 6 except less cast iron foot. The support is arranged for use with a 1½-inch round flange for floor rest. Flange not furnished.

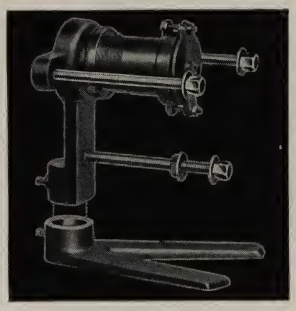
No. 8 for Lead Pipe—With Foot

Same as No. 6 except arranged for use with lead pipe.

Standard Wall Closet Supports

Test Cap Type for Blowout Type Wall Closets

No. 22 for Iron Pipe—With Foot



No. 22

Extra heavy cast iron wall closet support furnished with tension bolts and compression bolt, chromard nuts, washers, flange, asbestos-treated gasket, and test cap.

The lower or compression bolt together with the pipe extension to floor and V-shaped cast iron foot constitute a patented cantilever principle by which all strain upon partition or threaded water fittings is eliminated. A gas and water-tight connection between closet and soil system is insured.

Blue prints showing methods of installation, on request.

The 1½-inch iron pipe extension nipple not furnished.

No. 21 for Iron Pipe—Without Foot

Same as No. 22 except less cast iron foot. The support is arranged for use with a ¾-inch iron pipe extension with round flange for floor rest. Pipe extension and flange not furnished.

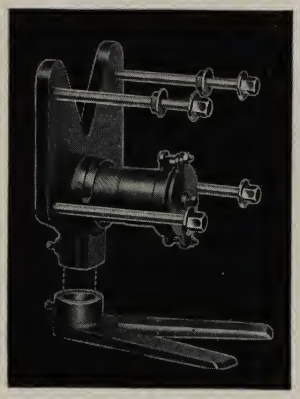
No. 24 for Lead Pipe—With Foot

Same as No. 22 except arranged for use with lead pipe.

Standard Wall Closet Supports

Test Cap Type for Syphon Jet Type Wall Closets

No. 26 for Iron Pipe—With Foot



No. 26

Extra heavy cast iron wall closet support furnished with tension bolts and compression bolt, chromard nuts, washers, flange, asbestos-treated gasket, and test cap.

The lower or compression bolt together with the pipe extension to floor and V-shaped cast iron foot constitute a patented cantilever principle by which all strain upon partition or threaded water fittings is eliminated. A gas and water-tight connection between closet and soil system is insured.

Blue prints showing methods of installation furnished on request.

The 1½-inch iron pipe extension nipple not furnished.

No. 25 for Iron Pipe—Without Foot

Same as No. 26 except less cast iron foot. The support is arranged for use with a ¾-inch iron pipe extension with round flange for floor rest. Pipe extension and flange not furnished.

No. 28 for Lead Pipe—With Foot

Same as No. 26 except arranged for use with lead pipe.

No. 1 Vogel Automatic Frost-Proof Hopper Combination

Hopper, tall oval flushing rim pattern, enameled inside, painted outside.

Tank, drum shaped galvanized pressure tank.

Fittings, supply and flush valves with 39-inch valve rod and casing and union ell flush connection.

Seat, reinforced hardwood.

Approx. Ship. Wt., lbs. 100.

Can be furnished with hopper enameled inside and out and with painted white enamel tank.

Self raising seat may be furnished at added cost. Furnished with hopper for caulking at no extra cost.

This closet uses but four gallons of water at a flush. Only enough water enters the tank to compress the air, and no more water is used until the seat is again operated. This air and water pressure flush is strong and cleansing. The valve working parts can be easily removed in a few moments by simply unscrewing the one flush cap back of the bowl.

Depressing the seat raises the rod, allowing the tank to fill. Releasing the seat allows a strong flush direct from tank to hopper. The water in valve casing then passes down through waste valve (below frost line) into sewer, leaving entire fixture empty.

No. 2

Vogel Automatic Frost-Proof Hopper Combination

Hopper, enameled inside painted outside, with enameled one-half roll flush rim with brass fan wash.

Fittings, supply and flush valve assembled with 39-inch valve rod and casing, and lead waste connection.

Seat, hardwood, with closed front, less cover.

Trap and soil pipe not included.

This combination contains but one washer and flushes while in use, after which no water remains in the fixture or in the casing. The valve parts can be easily removed from above the floor.

Approximate Shipping Weight.....pounds 50

Can be furnished with hopper enameled inside and outside and with self-raising seat.

Also available with 4-inch outlet for caulking into bell end of soil pipe.

No. 10 Vogel Automatic Syphon Action Closet Combination with vitreous china syphon action bowl, heavy golden oak seat with nickel-plated brass hinges, painted white enameled drum shaped pressure tank, nickel-plated automatic seat-acting flush valve and union ell flush connection.

Operating lever and flange it operates against are of heavy bronze.

All water drains out of flush valve body so that in places where fires may be banked over the week end, valves will not be damaged by frost.

Must have 20 pounds pressure at closet.

Roughs at 14½ inches from wall to center of waste outlet.

Approximate Shipping Weight.....pounds 115

No. 5 Vogel Automatic Enameled Iron Hopper Combination, enameled flushing rim hopper and S trap enameled inside, reinforced hardwood seat, heavy brass flush valve, galvanized pressure tank, and union ell flush connection.

This combination can be furnished with full S, ¾ S and ½ S trap to caulk. Can also be furnished with hopper and trap enameled inside and outside.

This hopper combination fills the demand for an automatic closet for inside factory use. Can be furnished with 8x24-inch galvanized cylindrical tank, when specified.

Approximate Shipping Weight.....pounds 110

Parts for Nos. 1, 2, 3, 4, 5, and 14 Vogel Closets

	Each
Nos. 1 and 3 Hopper, Tall Oval Enameled Rim.....	$9.50
No. 5 Hopper, Short Oval Enameled Rim.....	8.50
No. 2 Fan Wash Hopper, Roll Enameled Rim.....	7.00
Tall Oval Vitreous China Hopper for Nos. 4 and 14.	13.00
Galvanized Cylindrical Pressure Tank, 8x24-Inch...	7.50
Galvanized Drum Shaped Tank, 7x18-Inch.....	7.50
Trap S or 1/2S for No. 5.....	5.00
Seat, Complete, for Nos. 1, 3 and 5, or 4 and 14, or 2	3.75
Valve and Casing, Comp. for No. 1.....	13.12
Valve and Casing, Complete, for No. 2.....	9.50
Valve and Casing Complete for No. 14.....	13.12
Valve Complete, for Nos. 3 and 5.....	11.38
Valve Complete for No. 14.....	11.38
Golden Oak Finish Seat, Nos. 1, 3, 4, 5 and 14, or 2	2.25
Golden Oak Varnish Finish Open Front Seat, Wood Only, for Nos. 1, 3, 4, 5 and 14.....	3.00
Seat Casting for Nos. 4 and 14.....	1.25

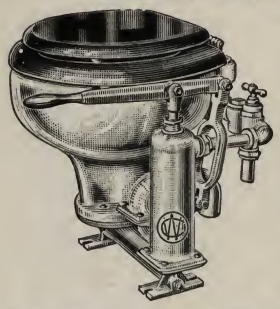
Parts for Nos. 1, 2, 3, 4, 5 and 14 Vogel Closets

No.	Description	Each
C1	Seat Casting for Nos. 1, 3 and 5 and New Style for No. 2.....	$1.25
B2	Seat Casting for Old Style No. 2.	1.25
3	Seat Buffer.....	.12
4	Small Packing Nut for Nos. 1 and 2 Old Style.	.32
5	Brass Screw, Top of Plunger, Nos. 1, 2 and 4.....	.10
6	Brass Socket, Tapped One End, Nos. 1, 2 and 4.....	.32
7	Brass Socket, Tapped Both Ends, for No. 2.	.32
8	Large Packing Nut for Nos. 1 and 2 Old Style.	.44

No.	Description	Each
9	Spring for Nos. 1, 2, 3, 4, 5 and 14.....	$.50
10	Small Plunger for Nos. 1, 2 and 4.....	.79
11–1	Upper Flush Valve Body for No. 1.....	3.75
11–2	Upper Valve Body for No. 2.....	3.15
11–4	Upper Valve Body for No. 4.....	3.75
11–5	Large Flush Valve Body for Nos. 3 and 5.....	3.75
11–14	Large Flush Valve Body for No. 14.....	3.75
12	Large Coupling Nut, Nos. 1, 3 and 5.....	.53
13	1-Inch Fan Wash Swivel for Nos. 1, 3 and 5...	.53
14	Flush Valve Plug for No. 1 Old Style.....	1.75
15	½-Inch Special Fuller Ball for Nos. 1, 2, 3, 4, 5 and 14.....	.07
16	½-Inch Brass Swivel, No. 2 Old Style.....	.38
17	Coupling Nut for No. 16.....	.38
18	Fan Wash, Hinge Fitting for No. 2 Old Style	1.05
19	Flush Valve Packing for Nos. 1, 3, 4, 5 and 14	.07
20	Brass Screw for Fuller Ball for Nos. 1, 2, 3, 4, 5 and 14.....	.10
21	½-Inch Brass Seat Bolt for Nos. 1, 2, 3, 4, 5 and 14.....	.38
22	Lead Waste Connection for Nos. 1, 2 and 4...	.75
23	Lifting Plate for Nos. 1, 2, 3, 4, 5 and 14.....	.50
24	½-Inch Brass Lifting Rod for Nos. 1, 2, 3, 4, 5 and 14.....	.50
25	Flanged Socket for Nos. 1 and 4.....	.38
26	Supply Valve Body Nos. 1, 2 and 4.....	1.88
27	Spacer Sleeve for Nos. 1 and 4.....	.32
28	Packing Cap, New Style, Nos. 1, 2, 3, 4, 5 and 14.....	.38
29	Flush Valve Plug, New Style, Nos. 1, 3, 4, 5 and 14.....	1.75
30	Hinge Fitting, No. 2 New Style.....	1.05
31	Coupling Nut for No. 2 New Style.....	.38
32	¾-Inch Fan Wash Swivel, No. 2 New Style...	.63
33	Large Packing Nut, No. 2, New Style.....	.75
34	Guide Sleeve for Nos. 3, 5 and 14.....	.63
35	Flanged Socket for Nos. 3, 5 and 14.....	.63
36	Lock Nut for Lifting Plate for Nos. 1, 2, 3, 4, 5 and 14.....	.10
37	Ring Nut for Flush Packing for Nos. 1 and 4..	.10
38	Galvanized Iron Valve Rod, Regular Length, for Nos. 1, 2 and 4.....	.40
39	Galvanized Iron Casing, Regular Length, for Nos. 1, 2 and 4.....	1.00

No. 1500 Regular Seaclo Marine Closet Combinations

For Use Above or Below Waterline



Bowl, white vitreous china.

Pump, bronze, 2½-inch diameter long stroke with large intake and outlet. Pump on right or left; specify.

Seat, closed front type; box type hinge.

Space occupied: Width, 17½ inches; front to back, 18 inches. Deck to cover, 14½ inches.

Supply, ¾ inch; discharge, 1½ inches.

Approximate shipping weight, 75 pounds.

No. **1500**, with Oak or Mahogany Seat and Cover.....each **$40.00**
No. **1500**, with White Seat and Cover.....each **42.50**

Seaclo Marine Closet Combinations

No. 1503 Monarch, with Horizontal Handle

May be used above or below water line.

Bowl, twice fired white vitreous china.

Pump, bronze with large intake and outlet. Fitted with specially treated leathers; horizontal handle and self-closing foot-operated water supply shut-off valve.

Seat, oak or mahogany with closed front and cover. Box type hinge.

Space occupied, 17½ inches wide, 18 inches front to back; deck to cover, 14½ inches.

Supply, ¾ inch; discharge, 1½ inches.

No. 1504 Imperial same as No. 1503 Monarch except with nickel-plated vertical handle.

No.	1503	1504
With Oak or Mahogany Seat.....each	$43.00	$45.00
With White Seat.....each	45.50	47.50
Approximate Ship. Weight.....pounds	75	75

Furnished with pump on right. Pump can be furnished on left when so ordered.

Use the Telephone and Save Time

We are organized to give special service on telephone orders.

Enameled Iron Hoppers

Tall Round—Flushing Rim

Fig. 604

Enameled Inside, without Brass Coupling.....each ....
Enameled Inside and Outside.....each ....

Enameled Iron Hoppers

Tall Oval—Flushing Rim With Flat Rim

Price, Enameled Inside, without Brass Coupling..each ...
" " " and Outside..... " ...
Add for Wood Rim Seat..... " ....

Philadelphia Pattern Hoppers

New Style **Old Style**

Price, Enam. Inside.ea. .... Price, Enam. Inside.ea. ....
" " All Over. " .... " " All Over. " ....

Afton Syphon Jet Closet Bowls

No. F-2205

No. F-2205, Elongated Pattern

Vitreous china syphon jet closet bowl, with jet, and 1½-inch top inlet. For flush valves only, and particularly with Quiet-Flush equipment.

No. F-2215, Round Front Pattern

Same as above except with round front.

No.	F-2205	F-2215
Center of Spud to Center of Outlet..inches	6	6
Approximate Shipping Weight.. ..pounds	61	66

Madera Syphon Jet Closet Bowls

Elongated Pattern

No. F-3122

Vitreous china syphon jet closet bowl, with concealed jet, 2-inch top inlet, and china bolt covers.

For low tank only.

Center of Spud to Center of Outlet	inches	7½
Approximate Shipping Weight	pounds	66

Madera Junior Syphon Jet Closet Bowls

Elongated Pattern

No. F-3132

No. F-3132
Vitreous china juvenile syphon jet closet bowl, 13 inches high, with concealed jet, 2-inch top inlet, and china bolt covers. For low tanks only.

No. F-2233
Same as No. F-3132 except with 1½-inch top spud for flush valve.

No	F-3132	F-2233
Spud ... in.	2	1½
Center of Spud to Center of Outlet ... in.	7½	6
Approximate Shipping Weight ... lbs.	64	64

Devoro Syphon Jet Closet Bowls

Round Front Pattern

No. 3142

Vitreous china syphon jet closet bowl, with concealed jet, 2-inch top inlet and china bolt covers.

For low tank only.

Center of Spud to Center of Outlet	inches	7½
Approximate Shipping weight	pounds	65

Devoro Baby Syphon Jet Closet Bowls

No. F-3163

No. F-3163, with 2-Inch Spud
No. F-2273, with 1½-Inch Spud
Vitreous china syphon jet closet bowl, 10 inches high with concealed jet and top inlet.

No. F-3161, with 2-Inch Spud
No. F-2271, with 1½-Inch Spud
Syphon jet closet bowl same as above except with lip.

	Round Front		Extended Lip	
No	F-3163	F-2273	F-3161	F-2271
Size Spud ... in.	2	1½	2	1½
Ctr. Spud to Ctr. Outlet. in.	6	6	6	6
Approx. Ship. Weight ... lb.	50	50	52	52

Madbrook Syphon Action Closet Bowls

No. F-3178

Elongated Pattern

Vitreous china syphon action closet bowl with jet and back spud.

No	F-3178	F-2432
Size Spud ... inches	2	1½
Face of Spud to Center of Outlet ... inches	3⅞	3⅞
Approximate Shipping Weight ... pounds	53	53

Siacto Syphon Action Closet Bowls

No. F-3188

Round Front Pattern

Vitreous china syphon action closet bowl with jet and back spud.

No	F-3188	F-2442
Size Spud	2	1½
Face of Spud to Center of Outlet ... inches	3⅞	3⅞
Approximate Shipping Weight ... pounds	50	50

Modernus Syphon Wash Down Closet Bowls

Round Front Pattern

No. F-3250

Vitreous china syphon wash down closet bowl with jet, back outlet and 2-inch back spud.

Also can be furnished with 1½-inch spud.

Face of Spud to Center of Outlet	inches	6⅜
Approximate Shipping Weight	pounds	40

Modernus Syphon Wash Down Closet Bowls

Round Front Pattern

No. F-3255

Vitreous china syphon wash down closet bowl with jet, center outlet, and 2-inch back spud.

Also can be furnished with 1½-inch spud.

Face of Spud to Center of Outlet	inches	10
Approximate Shipping Weight	pounds	40

Modernus Syphon Wash Down Closet Bowls

Extended Back Outlet—Round Front Pattern

No. F-3265

Vitreous china syphon wash down closet bowl with jet, extra extended back outlet, and 2-inch back spud.

Also can be furnished with 1½-inch spud.

No	F3260	F3265
Face of Spud to Center of Outlet....inches	4⅜	2⅜
Approximate Shipping Weight.....pounds	45	47

Modernus Syphon Wash Down Closet Bowls

With Integral Seat—Round Front Pattern

No. F-3270

Vitreous china syphon wash down closet bowl with integral seat, jet, and 2-inch back spud.

Also can be furnished with 1½-inch spud.

Face of Spud to Center of Outlet.....inches	6⅜
Approximate Shipping Weight.....pounds	40

Vitreous China Low Tanks

Vitreous china low tank with beveled corners and depressed lid.

Fittings, elevated float valve, flush valve, single action flush lever with metal handles, 2″ flush connection, wall screws, and supply pipe to floor.

Six-gallon tank has elbow; 8-gallon tank has straight flush connection.

With Bottom Supply No.....	F-4050	F-4070
With Concealed Supply No...	F-4055	F-4075
Capacity.....gal.	6	8
Size.....in.	20½x8x16½	22¾x7¾x18¼
Approx. Ship. Wt.....lb.	62	80

No. F-4100

Vitreous China High Tanks

For Top Supply

Vitreous china high tank for top supply.

Can be furnished with pull or automatic fittings. Specify when ordering.

No	1	2
Size.....inches	15½x9¾x10¾	19x12¾x11
Capacity.....gallons	4	6
Approx. Ship. Wt.....pounds	50	60

Furnished in white only.

Enameled Cast Iron Low Tanks

No. P-6410

No. P-6410

Capacity, 6 gallons, square corners, flat lid.

Fittings, elevated float valve, flush valve, single action flush lever with metal handle, 2-inch elbow flush connection, wall screws, and straight supply pipe to floor.

Exposed metal chromium plated.

No. P-6400

Same as above except 8-gallon capacity, with 2-inch offset flush connection.

No	P-6410	P-6400
Size.....inches	20¾x7¾x16¾	20¾x7¾x18½
Approx. Ship. Wt....pounds	100	112

Enameled Iron High Tanks

No. P-6425

Enameled iron high tank for top supply.

Can be furnished with pull or automatic fittings. Specify when ordering.

Can also be furnished for bottom supply.

No.....	1	2	3	4
Cap..gals.	2½	5	7½	12
Size....in.	15¾x8x10½	19¼x10½x10¼	23¾x12½x10¼	26½x14¾x14¼
Ship.Wt. .....lbs.	40	52	70	110

Furnished regular white enamel all over, enameled inside only, or painted inside and outside.

Wood Low Closet Tanks

Wood low closet tank with copper lining, elevated high pressure float valve, Douglas pattern flush valve, flushing lever with china top handle, nickel-plated offset or elbow flush connection, nickel-plated supply and escutcheon.

Woodwork in natural or golden oak or mahogany finish.

Price..... each .....

Wood High Closet Tanks

Oak round cornered high closet tank with 8-ounce copper lining and varnish finish, high pressure float valve, galvanized goose neck flush valve, chain and pull.

Price, 5-Gallon .....each .....

Price, 7-Gallon .....each .....

Can be furnished with top supply float valve.

Furnished in natural or golden oak.

Church Mol-Tex Molded Plastic Seats

Cross Section Showing Heavy Mol-Tex Covering Approximately 3/16 Inch Thick

The heavy covering of the Mol-Tex seat is a thick, composition plastic, molded in one operation over a hardwood core, under approximately 400,000 pounds hydraulic heat pressure.

Strong, Tough and Resilient —Blows and Bangs have No Effect on Molded Surface

This results in a seat that has no joints or seams—one homogeneous unit—whose toughness and resilience prevents fracture, cracking and chipping.

The nature of Mol-Tex and the tremendous hydraulic pressure under which the seat is made gives a beautiful, thick, lustrous finish with a lasting hardness and toughness hitherto unknown.

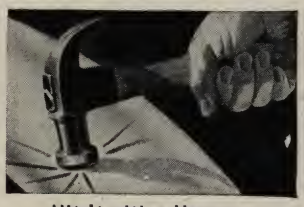
Mol-Tex seats, in either black or white have a permanent finish which can be maintained with a minimum of care. Impervious to atmospheric or climatic changes.

Waterproof—Dampness and Moisture Cannot Crack, Swell or Warp the Seat

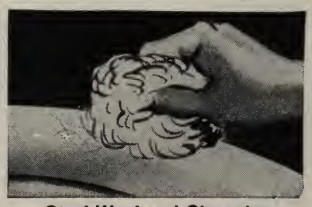
Hinges furnished are Mol-Tex, molded over metal insert which eliminates all exposed metal. The axis of hinge is located between seat and cover.

Burn It with a Cigarette

Stain It with Iodine



Hit It with a Hammer



Steel Wool and Cleansing Powder Quickly Restore the Pure, White Lustre

Church Sheet Covered Seats

Sheet covered seats are attractive, hygienic, strong and durable. Made of selected hardwood (birch, beech and maple), air dried and thoroughly seasoned. DeLuxe seats made from 1½-inch stock; Regal seats from 1¼-inch stock.

Seats are produced by veneering a heavy white sheathing on the hardwood base by special process resulting in a seamless surface which affords the greatest amount of protection against wear, tear, and atmospheric conditions.

Lap weld method is used in sealing the sheathing to the hardwood base. After lap welding the surface becomes a smooth homogeneous finish without visible joints or seams.

Closed front seats are reinforced both front and back by means of spiral grooved dowels. Dowels are forced into the seat cross grain. Open front seats are doubly reinforced by two spiral grooved dowels inserted cross grain in back.

Hinges furnished are Mol-Tex, molded over metal insert which eliminates all exposed metal. Axis of hinge is located between seat and cover, so that when seat and cover are raised, the cover acts as a counterbalance and assures seat standing up securely.

Church Mol-Tex Closet Seats

For Elongated Bowls

Mol-Tex molded plastic closed front seat with full saddle construction, extended back, cover, bumpers, and plastic molded hinge.

Furnished with black or white finish.

		White	Black
No. **1050**, with Cover	each	....	....
No. **950**, without Cover	each	....	....

No. 1070 Church Mol-Tex Closet Seats

For Elongated Bowls

Mol-Tex molded plastic open front seat with full saddle construction, extended back, cover, bumpers and plastic molded hinge.

Furnished with black or white finish.

		White	Black
No. **1070**	each	....	....

No. 1250 Church Mol-Tex Closet Seats

For Regular Bowls

Mol-Tex molded plastic closed front seat with full saddle construction, extended back, cover, bumpers and plastic molded hinge.

Furnished with black or white finish.

		White	Black
No. **1250**	each	....	....

No. 1270 Church Mol-Tex Closet Seats

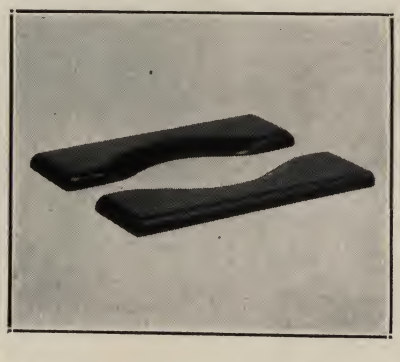
For Regular Bowls

Mol-Tex molded plastic open front seat with full saddle construction, extended back, cover, bumpers, and plastic molded hinge.

Furnished with black or white finish.

		White	Black
No. **1270**	each	....	....

No. 8300 Church Navy Trough Seats



Mol-Tex molded plastic Navy trough seat for No. H-8 troughs.

Type A

Length...in.	21
White....ea.	..
Black....ea.	..

Type B

Length...in.	18¼
White....ea.	....
Black....ea.	....

Furnished with black or white finish.

No. 9100 Church Mol-Tex, Closet Seats

For Regular Bowls

Mol-Tex molded plastic open front and open back seat without cover, with bumpers and plastic molded hinge.

Furnished with black or white finish.

		White	Black
No. **9100**	each	....	....

No. 9300 Church Mol-Tex Closet Seats

For Regular Bowls

Mol-Tex molded plastic closed front seat with full saddle construction, without cover, with bumpers, and plastic molded hinge.

Furnished with black or white finish.

		White	Black
No. **9300**	each	....	....

No. 9500 Church Mol-Tex Closet Seats

For Elongated Bowls

Mol-Tex molded plastic open front seat without cover, with bumpers and plastic molded hinge.

Furnished with black or white finish.

		White	Black
No. **9500**	each	....	....

No. 9517 Church Mol-Tex Closet Seats

For Elongated Bowls

Mol-Tex molded plastic open front seat without cover, with bumpers, plastic molded hinge and hinge check.

Furnished with black or white finish.

	White	Black
No. **9517**.....each	....	....

No. 9700 Church Mol-Tex Closet Seats

For Regular Bowls

Mol-Tex molded plastic open front seat with extended back, without cover, with bumpers and plastic molded hinge.

Furnished with black or white finish.

	White	Black
No. **9700**.....each	....	....

No. 9717 Church Mol-Tex Closet Seats

For Navy H-1 to H-7 Regular Bowls

Mol-Tex molded plastic open front seat without cover, with bumpers, plastic molded hinge and hinge check.

Furnished with black or white finish.

	White	Black
No. **9717**.....each	....	....

No. 9900 Church Mol-Tex Closet Seats

For Elongated Bowls

Mol-Tex molded plastic open front and open back seat without cover, with bumpers and plastic molded hinge.

Furnished with black or white finish.

	White	Black
No. **9900**.....each	....	....

Church DeLuxe Closet Seats

For Regular Bowls

DeLuxe sheet covered closed front seat with cover, bumpers and plastic molded hinge.

Made from full 1½-inch stock.

Furnished white or plain and pearl colors to match colored fixtures.

	White	Plain Colors	Pearl Colors
No. **142**M, with Cover.....each	....	....	....
No. **150**M, without Cover....each	....	....	....

Church DeLuxe Closet Seats

For Elongated Bowls

DeLuxe sheet covered closed front seat with cover, bumpers and plastic molded hinge.

Made from full 1½-inch stock.

Furnished white or plain and pearl colors to match colored fixtures.

	White	Plain Colors	Pearl Colors
No. **144**M, withCover.....each	....	....	....
No. **154**M, without Cover....each	....	....	....

Church DeLuxe Closet Seats

For Regular Bowls

DeLuxe sheet covered open front seat without cover, with bumpers and plastic molded hinge.

Made from full 1½-inch stock.

Furnished white or plain and pearl colors to match colored fixtures.

	White	Plain Colors	Pearl Colors
No. **170**M, without Cover....each	....	....	....
No. **162**M, with Cover.....each	....	....	....

Church DeLuxe Closet Seats

For Elongated Bowls

DeLuxe sheet covered open front seat with cover, bumpers and plastic molded hinge.

Made from full 1½-inch stock.

Furnished white or plain and pearl colors to match colored fixtures.

	White	Plain Colors	Pearl Colors
No. **164**M, with Cover.....each	....	....	....
No. **174**M, without Cover....each	....	....	....

Church Regal Closet Seats

For Elongated Bowls

Regal sheet covered closed front seat with cover, bumpers, and plastic molded hinge.

Made from full 1¼-inch stock.

Furnished white or plain and pearl colors to match colored fixtures.

	White	Plain Colors	Pearl Colors
No. **580M**, with Cover.....each	....	....	....
No. **585M**, without Cover....each	....	....	....

Church Regal Closet Seats

For Elongated Bowls

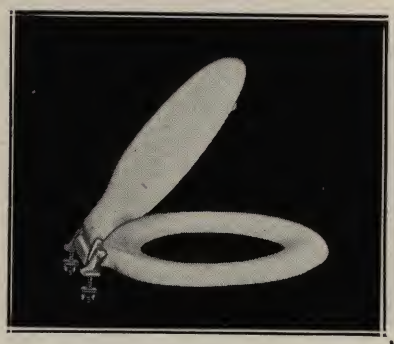
Regal sheet covered open front seat without cover, with bumpers and plastic molded hinge.

Made from full 1¼-inch stock.

Furnished white or plain and pearl colors to match colored fixtures.

	White	Plain Colors	Pearl Colors
No. **595M**, without Cover....each	....	....	....
No. **590M**, with Cover.....each	....	....	....

Church Regal Closet Seats



For Regular Bowls

Regal sheet covered closed front seat with cover, bumpers, and plastic molded hinge.

Made from full 1¼-inch stock.

Furnished white or plain and pearl colors to match colored fixtures.

	White	Plain Colors	Pearl Colors
No. **640M**, with Cover.....each	....	....	....
No. **650M**, without Cover....each	....	....	....

Church Regal Closet Seats

For Regular Bowls

Regal sheet covered open front seat without cover, with bumpers and plastic molded hinge.

Made from full 1¼-inch stock.

Furnished white or plain and pearl colors to match colored fixtures.

	White	Plain Colors	Pearl Colors
No. **670M**, without Cover....each	....	....	....
No. **660M**, with Cover.....each	....	....	....

No. 21 TSCO White Closet Seats

For Regular Bowls

Church sprayed finish closed front seat with cover, bumpers and white coated hinge.

Made from full 1-inch stock.

Furnished white only.

No. **21**.....each ....

No. 10-T Church Climax Closet Seats

For Regular Bowls

Climax sheet covered closed front seat with cover, bumpers, and molded hinge.

Made from full 1-inch stock.

Furnished white only.

No. **10-T**.....each ....

No. 11-T Church Climax Closet Seats

For Regular Bowls

Climax sheet covered closed front seat without cover, with bumpers and plastic molded hinge.

Made from full 1-inch stock.

Furnished white only.

No. **11-T**.....each ....

Church Sprayed Finish Closet Seats

For Regular Bowls

Church sprayed finish closed front seat with cover, bumpers, and white coated hinge.

Made from full 1¼-inch stock.

Furnished white only.

*Furnished with extended back instead of square back type as in illustration.

No. **60-T**, with Cover.....each ....
*No. **61-T**, without Cover.....each ....

Church Sprayed Finish Closet Seats

For Regular Bowls

Church sprayed finish open front seat without cover, with bumpers and white coated hinge.

Made from full 1¼-inch stock.

Furnished white only.

*Furnished with square back instead of extended back type as in illustration.

No. **63-T**, without Cover .....each ....
*No. **62-T**, with Cover.....each ....

No. 10-T Church Varnish Finish Closet Seats

For Regular Bowls

Church varnish finish closed front seat with cover, bumpers, and black coated hinge.

Made from full 1-inch stock.

Furnished with rubbed and polished varnished finish. Specify whether oak or mahogany fiinish is desired.

No. **10-T**.....each ....

Church Varnish Finish Closet Seats

For Regular Bowls

Church varnish finish closed front seat with cover, bumpers, and black coated hinge.

Made from full 1¼-inch stock.

Furnished with rubbed and polished varnish finish. Specify whether oak or mahogany finish is desired.

No. **70-T**, with Cover.....each ....
*No. **71-T**, without Cover.....each ....
*Furnished with extended back instead of square back type.

Church Varnish Finish Closet Seats

For Regular Bowls

Church varnish finish open front seat without cover and with bumpers and black coated hinge.

Made from full 1¼-inch stock.

Furnished with rubbed and polished varnish finish. Specify whether oak or mahogany finish is desired.

No. **73-T**, without Cover.....each ....
*No. **72-T**, with Cover.....each ....
*Furnished with extended back instead of square back type.

Church Varnish Finish Closet Seats

For Elongated Bowls

Church varnish finish open front seat without cover and with bumpers and black coated hinge.

Made from full 1¼-inch stock.

Furnished with rubbed and polished varnished finish. Specify whether oak or mahogany finish is desired.

No. **85-T**, without Cover.....each ....
*No. **84-T**, with Cover.....each ....
*Furnished with extended back instead of square back.

No. 91 Church Cantonment Closet Seats

For Regular Bowls

Church open front and open back seat, without cover, with bumpers and zinc coated malleable iron hinge and front bar.

Made from full 1¼-inch stock.

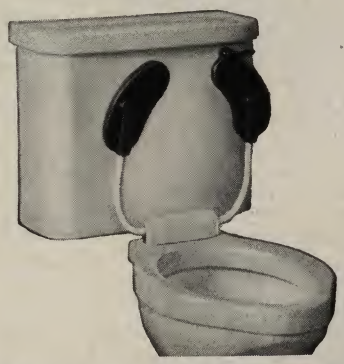
Furnished with linseed oil finish on hardwood.

No. **91**.....each ....

Sperzel Closet Seats

Seat consists of two scientifically designed black bakelite seat pads connected by a white plastic covered yoke. All surfaces are smooth, polished and non-porous.

No. 20



A self-raising seat, that stands perpendicular to the bowl when not in use. The spring mechanism, which pulls the seat erect to a 90° angle is enclosed in a bakelite housing with a white plastic cap.

No. **20**.....each ....

No. 40

Has hinge bolts enclosed in black individual housings, which are made from the same material as the pads.

Equipped with spring tension units which are mounted on the hinge bolts. They exert a constant pressure which holds the seat firmly to whatever position it is raised, but is not a self-raising seat.

No. **40**.....each ....

Church Sani-Black Closet Seats

For Elongated Bowls

Sani-Black open front seat without cover. Integral molded check hinge.

The surface of Sani-Black seats is a composition hard rubber vulcanization over a kiln-dried hardwood core. Hinges are of brass with hard rubber covering.

Can also be furnished in brown mahogany color.

No. **2600**, with Cover, Plain Hinge..... each .....
No. **2500**, without Cover, with Check Hinge.... each .....

No. 5100 Church Sani-Black Closet Seats

For Regular Bowl

Sani-Black open front, open back seat, without cover and with integral molded check hinge.

The surface of Sani-Black seats is a thick composition hard rubber vulcanization over a kiln-dried hardwood core. Hinges are of brass with hard rubber covering.

Can also be furnished in brown mahogany color.

No. **5100**.....each ....

Church Sani-Black Closet Seats

For Regular Bowls

Sani-Black open front seat without cover. Integral molded check hinge.

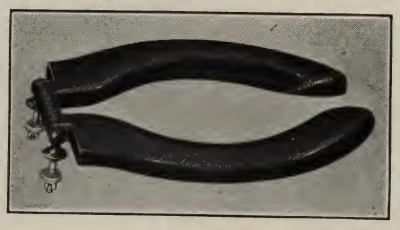
The surface of Sani-Black seats is a thick composition hard rubber vulcanization over a kiln-dried hardwood core. Hinges are of brass with hard rubber covering.

Can also be furnished in brown mahogany color.

No. **5700**, without Cover, with Check Hinge.....each ....
No. **5600**, with Cover, Plain Hinge.....each ....

No. 5900 Church Sani-Black Closet Seats

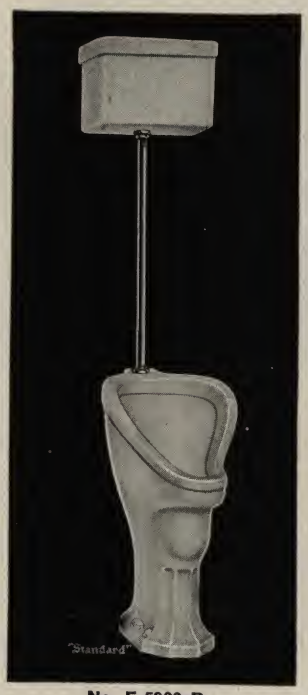
For Elongated Bowls



Sani-Black open front seat without cover. Integral molded check hinge. The surface of Sani-Black seats is a composition hard rubber vulcanization over a kiln dried hardwood core. Hinges are brass with hard rubber covering.

Can also be furnished in brown mahogany color.

No. **5900**.....each .....



No. F-5900-B

Madstone Vitreous China Syphon Jet Pedestal Urinal with flushing rim and top inlet spud for 1½-inch O.D. tubing slip joint.

Tank, vitreous china, 6-gallon capacity, with top supply float valve, automatic flush fittings, and flush pipe assembly.

Exposed metal chromium plated.

Width Urinal only..in.	13½
Height Urinal only..in.	27¾
Back to Front.....in.	22½
Floor to Top of Lip.....in.	20
Weight, Urinal Only.....lb.	90
Weight, Tank and Fittings.....lb.	70

Regular type water closet floor flanges should be used with Madstone Urinals.

Can be used with flush valve.

Furnished in white only.

No. F-5900-C

Madstone Vitreous China Syphon Jet Pedestal Urinal with flushing rim and top inlet spud for 1¼-inch O.D. tubing slip joint.

Fittings, Flush Valve with vacuum breaker, side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch straight flush connection, wall and spud flanges, 2 closet screws, and 4 china bolt caps.

Exposed metal chromium-plated.

Width Over All.....inches	13½
Height Urinal Only.....inches	27¾
Front to Back.....inches	22½
Floor to Top of Lip.....inches	20
Approximate Shipping Weight, Less Valve..pounds	90

Regular type water-closet floor flanges should be used with Madstone Urinals.

Furnished in white only.

No. F-5905-D

Madstone Vitreous China Syphon Jet Pedestal Urinal with flushing rim and back inlet spud for 1¼-inch O.D. tubing slip joint.

Fittings, Flush Valve with vacuum breaker, side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch straight flush connection, wall and spud flanges, 2 closet screws, and 4 china bolt caps.

Exposed metal chromium-plated.

Width Overall	inches	13½
Height Urinal Only	inches	27¾
Front to Back	inches	22½
Floor to Top of Lip	inches	20
Approximate Shipping Weight, Less Valve	pounds	90

Regular type water-closet floor flanges should be used with Madstone Urinals.

Furnished in white only.

No. F-6000-C, Top Supply for Exposed Valve
No. F-6005-D, Back Supply for Concealed Valve

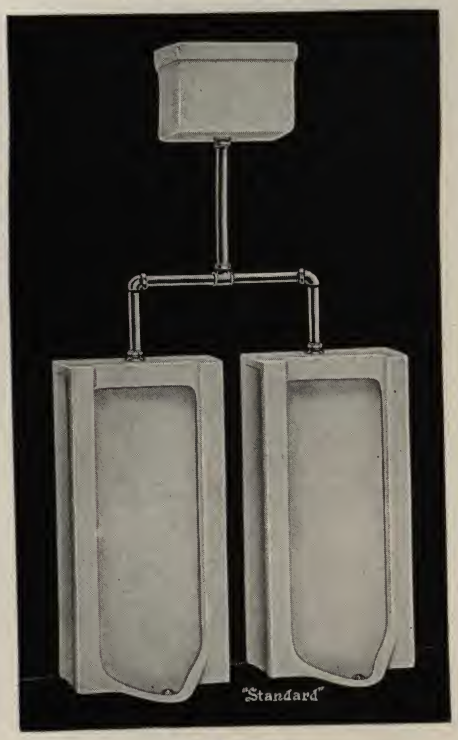
Chinal Vitreous China Urinal Stall with straight front and integral flush spreader.

Fittings, flush valve with vacuum breaker, side inlet, ¾ inch ground joint union angle stop, metal oscillating handle, ¾-inch straight flush connection, wall and spud flanges, and brass beehive strainer with outlet connection for 2-inch lead or iron pipe.

Exposed metal chromium plated.

Width of Stall	inches	18	21
Height of Stall	inches	42	42
Height from Floor	inches	38	38
Wall to Front of Lip	inches	16	16
Approx. Ship. Wt., Each Stall	pounds	150	180

Furnished in white or colors.



No. F-6020-B

Battery of Chinal Vitreous China Urinal Stalls with straight fronts, integral spreaders, top spuds for ¾-inch O.D. tubing slip joints, and brass beehive strainers with outlet connection for 2-inch iron or lead pipe.

Tank, vitreous china, 4-gallon capacity, with top supply float valve, automatic flush fittings, and flush pipe assembly.

Exposed metal chromium plated.

No. F-6010-B, Single Stall with One 4-Gallon Tank
No. F-6020-B, Two Stalls with One 4-Gallon Tank
No. F-6023-B, Three Stalls with One 4-Gallon Tank
No. F-6024-B, Four Stalls with One 6-Gallon Tank

Width Each Stall	inches	18	21
Height of Stall	inches	42	42
Height from Floor	inches	38	38
Wall to Front of Lip	inches	16	16
Approximate Shipping Weight, Each Stall	pounds	150	180
Approximate Shipping Weight, Tank and Fittings	pounds	60	60

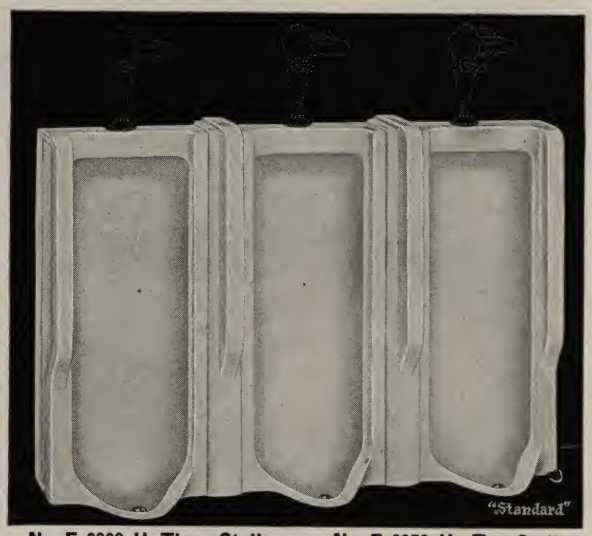
Dimensions Over All

No.	F-6010-B	F-6020-B	F-6023-B	F-6024-B
Maximum Width inches	18	42	66	90
	21	51	78	105

To order 18-inch stalls as described above except with seam covers between stalls and with integral extended ends on outside stalls, specify No. F-6020-L, No. F-6023-L, or No. F-6024-L. The 21-inch width stall is not furnished with the integral extended end on right or left side.

The overall width of No. F-6020-L, No. F-6023-L, and No. F-6024-L (in 18-inch width only) vary, and are dependent on the distance set apart whether to accommodate 2, 3, 4, or 6-inch seam covers.

Furnished in white or colors.



No. F-6060-H, Three Stalls No. F-6050-H, Two Stalls

Battery of Chinal Vitreous China Urinal Stalls with integral flush spreaders. End stalls have one integral shield, inside stalls have seam covers.

Fittings, flush valves with vacuum breakers, side inlets, ¾-inch ground joint union angle stops, ¾-inch straight flush connections, wall and spud flanges, and brass beehive strainers with outlet connection for 2-inch lead or iron pipe.

*Width of Each Stall	inches	18
Height of Each Stall	inches	42
Height, Each Stall from Floor	inches	38
Wall to Front of Lip	inches	16
Approximate Shipping Weight, Each Stall	pounds	160

*The overall widths vary, dependent on distance set apart whether to accommodate 2, 3, 4 or 6-inch seam covers.

Furnished in white or colors.

No. F-6100-C, Top Supply for Exposed Valve
No. F-6105-D, Back Supply for Concealed Valve

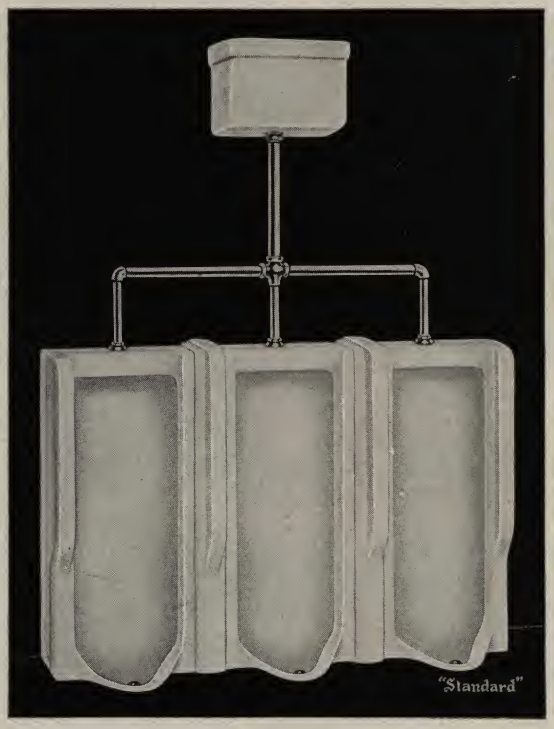
Chinal Vitreous China Urinal Stall with integral extended shields and integral flush spreader.

Fittings, flush valve with vacuum breaker, side inlet, ¾-inch ground joint union angle stop, metal oscillating handle, ¾-inch straight flush connection, wall and spud flanges, and brass beehive strainer with outlet connection for 2-inch lead or iron pipe.

Exposed metal chromium-plated.

Width of Stall	inches	18
Height of Stall	inches	42
Height from Floor	inches	38
Wall to Front of Lip	inches	16
Approximate Shipping Weight, Each Stall	pounds	160

Furnished in white or colors.



No. F-6023-L

Battery of Chinal Vitreous China Urinal Stalls with seam covers and extended shields on ends of outside stalls, integral spreaders, top spuds for ¾-inch O.D. tubing slip joints, and brass beehive strainers with outlet connection for 2-inch iron or lead pipe.

Tank, vitreous china, 4-gallon capacity, with top supply float valve, automatic flush fittings, and flush pipe assembly.

Exposed metal chromium plated.

No. F-6020-L, Two Stalls with One 4-Gallon Tank
No. F-6023-L, Three Stalls with One 4-Gallon Tank
No. F-6024-L, Four Stalls with One 6-Gallon Tank

Width Each Stall	inches	18
Height of Stall	inches	42
Height from Floor to Top of Tank	inches	94½
Wall to Front of Lip	inches	16
Approximate Shipping Weight, Each Stall	lb.	150
Approximate Shipping Weight, Tank and Fittings	lb.	60

The overall width varies, and is dependent on the distance set apart whether to accommodate 2, 3, 4, or 6-inch seam covers.

Furnished in white only.

No. F-6110-B

Chinal Vitreous China Urinal Stall with integral extended shields, integral flush spreader, top spud for ¾-inch O.D. tubing slip joint, and brass beehive strainer with outlet connection for 2-inch lead or iron pipe.

Tank, vitreous china, 4-gallon capacity, with top supply float valve, automatic flush fittings, and flush pipe assembly.

No. F-6110-B, Single Urinal

Size	in.	18
Width	in.	18
Height Urinal Only	in.	42
Height Urinal from Floor	in.	38
Wall to Front	in.	16
Weight, Urinal Only	lbs.	160
Wt., Tank and Fittings	lbs.	60

No. 6120-B, Two Urinals with Double Flush Pipe Assembly

Size	in.	18
Width	in.	42
Height Urinal Only	in.	42
Height Urinal from Floor	in.	38
Wall to Front	in.	16
Weight, Urinal Only	lbs.	320
Weight, Tank and Fittings	lbs.	60

Furnished in white or colors.

No. F-6200-C, Top Spud for Exposed Valve
No. F-6205-D, Back Spud for Concealed Valve

Washal Vitrecus China Wash-Out Urinal with integral extended shields, spreader, strainer, trap with cleanout, and top spud for ¾-inch O.D. tubing slip joint. Supported on wall hangers and loose head lag screws.

Fittings, flush valve with vacuum breaker, side inlet, ¾-inch ground joint union angle stop, metal oscillating handle, ¾-inch straight flush connection, and wall and spud flanges.

Exposed metal chromium plated.

Width	inches	18	24
Wall to Front	inches	11¼	11¼
Height from Floor	inches	53	53
Approx. Ship. Weight, less Valve	pounds	92	115

The Washal will operate satisfactorily with a flush valve having a ¾-inch I.P. size supply line.

Furnished in white only.

Vitreous China Seam Covers

No. F-6021

No. F-6026

No. F-6036

No. F-6021 vitreous china seam cover with straight front. Made in sizes to set urinals 2, 3, 4, or 6 inches apart.

No. F-6026 vitreous china seam cover with extended shield. Made in sizes to set urinals 2, 3, 4, or 6 inches apart.

No. F-6036 vitreous china left end seam cover for straight front urinal stall. For urinal set 2 inches from wall.

No. F-6037 vitreous china right end seam cover for straight front urinal stall. For urinal set 2 inches from wall.

To Set Stalls Apart	inches	2	3	4	6
Minimum Distance	inches	1¼	2	3¼	5½
Maximum Distance	inches	2½	3½	4½	6½
No. F-**6021** Approx. Ship. Wt.	pounds	35	40	45	53
No. F-**6026** Approx. Ship. Wt.	pounds	43	47	54	58
To Set from Wall	inches	2			
Nos. F-**6036** and F-**6037** Approx. Ship. Wt.	pounds	40			

Furnished in white or colors.

No. F-6210-B

Washal Vitreous China Urinal with integral extended shields, spreader, strainer, trap with cleanout, top spud for ¾-inch O.D. tubing slip joint, and outlet for 2-inch inside I.P. thread. Supported on wall hangers and loose head lag screws.

Tank, vitreous china, 4-gallon capacity, with top supply float valve, automatic flush fittings, and flush pipe assembly.

No. F-6210-B, Single Urinal

Size	in.	18	24
Width	in.	18	24
Wall to Front	in.	11¼	11¼
Wt., Urinal Only	lbs.	92	115
Wt., Tank and Fittings	lbs.	60	60

No. F-6220-B Two Urinals with Double Flush Pipe Assembly

Size	inches	18	24
Width	inches	42	54
Wall to Front	inches	11¼	11¼
Weight, Urinals Only	pounds	184	230
Weight, Tank and Fittings	pounds	60	60

Furnished in white or colors.

No. F-6230-C, Top Supply for Exposed Valve
No. F-6235-D, Back Supply for Concealed Valve

Casal Vitreous China Blow-Out Urinal with integral extended shields, integral flush spreader, strainer, trap, top inlet spud for 1¼-inch O.D. tubing slip joint, and outlet with 2-inch inside I.P. threads. Supported on concealed wall hangers and loose head lag screws.

Fittings, flush valve with vacuum breaker, side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1¼-inch straight flush connection, wall and spud flanges.

Exposed metal chromium-plated.

Width	inches	18	24
Wall to Front	inches	13¾	13¾
Height	inches	57	57
Approximate Shipping Weight, less Valve	lbs.	110	135

For use with flush valve only. To successfully operate, the flush valve should have at least a 1-inch supply, and pressure should be at least 10 pounds while flushing.

No. F-6245-D, Back Supply for Concealed Valve
No. F-6249-C, Top Supply for Exposed Valve

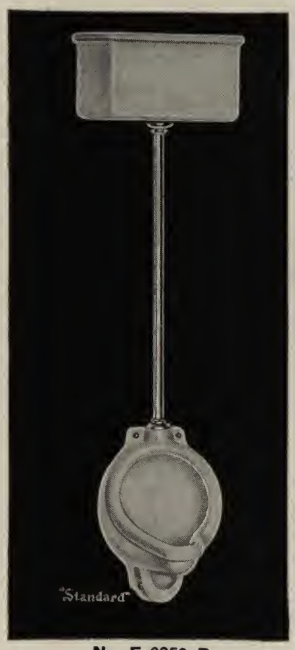
Alta Vitreous China Syphon Jet Urinal with integral flushing rim, syphon jet, strainer, trap, back inlet spud for 1¼-inch O.D. tubing slip joint, and outlet with 2-inch inside I.P. thread. Supported on loose head lag screws.

Fittings, flush valve with vacuum breaker, side inlet, 1-inch ground joint union straight stop, metal oscillating handle, 1¼-inch elbow flush connection and wall flange.

Exposed metal chromium-plated.

Width	inches	14
Wall to Front	inches	14
Height from Floor	inches	45
Approximate Shipping Weight, less Valve	pounds	52

Furnished in white only.



No. F-6250-B

Alta Vitreous China Syphon Jet Urinal with integral flushing rim, syphon jet, strainer, trap, top inlet spud for 1¼-inch O.D. tubing slip joint, and outlet with 2-inch inside I.P. thread. Supported on loose head lag screws.

Tank, enameled cast iron, 2½-gallon capacity, with top supply float valve, automatic flush fittings, and flush pipe assembly.

No. F-6250-B, Single Urinal

Width	in.	14
Wall to Front	in.	14
Height, Urinal Only	in.	22
Wt., Urinal Only	lbs.	52
Wt., Tank and Fittings	lbs.	40

No. F-6260-B, Two Urinals with Double Flush Pipe Assembly

Size	in.	14
Width	in.	38
Wall to Front	in.	14
Height, Urinal Only	inches	22
Weight, Urinal Only	pounds	104
Weight, Tank and Fittings	pounds	52

Furnished in white only.

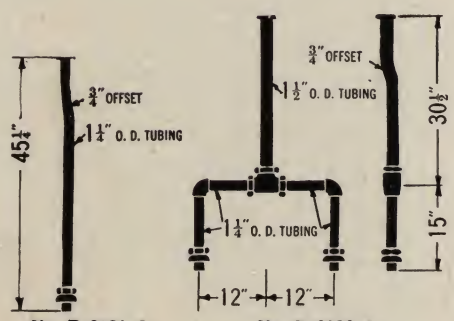
No. F-6281

Bering Vitreous China Flat Back Urinal with flushing rim and integral strainer, ¾-inch spud on inlet, and 1½-inch spud on outlet with 1½-inch O.D. tubing tailpiece, 6 inches long.

Width Over All	inches	12½
Height Over All	inches	19
Wall to Front of Lip	inches	13½
Approximate Shipping Weight	pounds	40

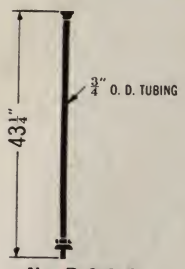
Furnished in white only.

Alta Flush Assemblies

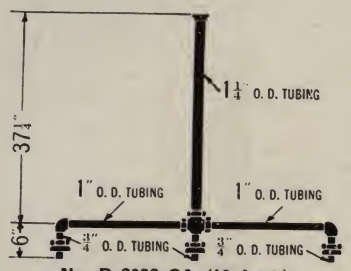


No. B-2031-A **No. B-2032-A**

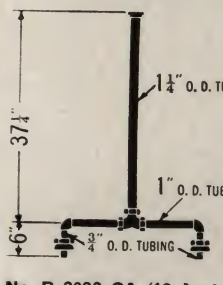
Chinal Flush Assemblies



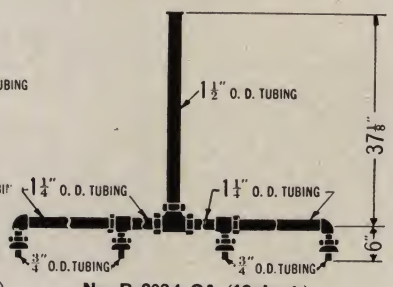
No. B-2031C



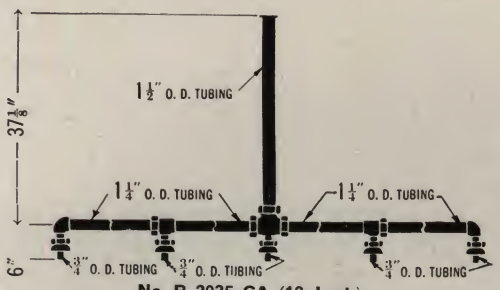
No. B-2033-CA (18-Inch)
No. B-2033-CD (21-Inch)



No. B-2032-CA (18-Inch)
No. B-2032-CD (21-Inch)



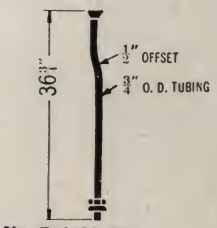
No. B-2034-CA (18-Inch)
No. B-2034-CD (21-Inch)



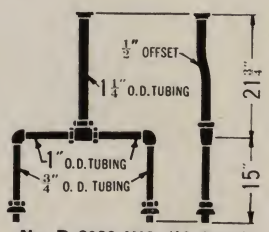
No. B-2035-CA (18-Inch)
No. B-2035-CD (21-Inch)

Lengths of flush pipes as shown are based on urinals spaced 6 inches apart or less.

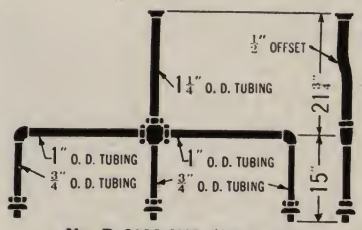
Washal Flush Assemblies



No. B-2031-W

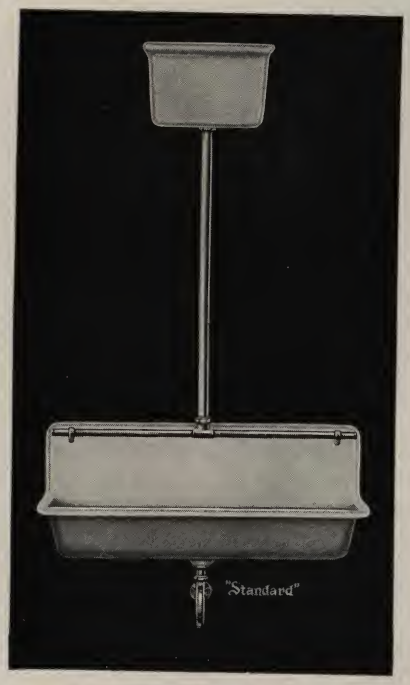


No. B-2032-WA (18-Inch)
No. B-2032-WB (24-Inch)



No. B-2033-WA (18-Inch)
No. B-2033-WB (24-Inch)

Pipe holders can be furnished if specified at an additional charge.



No. P-6460-F

Calmo Enameled Cast Iron Urinal with back and roll rim. Supported on concealed wall hangers.

Tank, enameled cast iron, with top supply float valve and automatic flush fittings.

Fittings, flush pipe, perforated wash-down pipe, clamps, and beehive strainer.

Trap, 1½-inch Bag pattern with metal wall flange.

Length.....feet	2	3	4	5	6
Approximate Shipping Weight, Urinal and Tank.....pounds	118	163	227	268	302

Available without trap and with waste coupling for lead pipe if desired.

Regularly furnished with urinal enameled inside and painted outside.

Furnished in regular or acid-resisting white enamel.

No. P-6470-F

Melbo Enameled Cast Iron Urinal with back and roll rim. Supported on concealed wall hangers.

Fittings, perforated polished brass wash-down pipe, clamps, ½-inch loose key stop, and beehive strainer.

Trap, 1½-inch Bag pattern with metal wall flange.

Length.....feet	2	3	4	5	6
Approximate Ship. Wt....pounds	78	123	187	228	250

Available without trap and with drain coupling for lead pipe if desired.

Regularly furnished enameled inside and painted outside.

Furnished in regular or acid-resisting white enamel.

No. F-8354-N

Croydic Vitreous China Drinking Fountain with center outlet. Furnished with wall screws to support fixture.

Fittings, angle stream anti-squirt bubbler with metal guard, regulating screw, strainer base and self-closing controlling valve with metal 4-arm handle.

Supply, ⅜-inch I.P. size to wall with loose key stop.

Trap, brass 1¼-inch P pattern with I.P. size outlet.

Exposed metal chromium plated.

Wall to Front	inches	16
Diameter of Bowl	inches	12
Approximate Shipping Weight	pounds	51

The opening from which the stream flows is above the overflow point of the receptacle.

Can be furnished with trap with 1½-inch I.P. size outlet when specified.

Furnished in white or colors.

No. F-8363

Bellfount Vitreous China Drinking Fountain with integral back and strainer. Supported on wall hanger and bolt.

Fittings, angle stream bubbler with self-closing controlling valve, renewable unit, metal 4-arm handle, and automatic volume regulator.

Supply, ⅜-inch I.P. size to wall with loose key stop.

Exposed metal chromium plated.

Wall to Front	inches	10
Length Over All	inches	8
Approximate Shipping Weight	pounds	56

Can be furnished with vitreous china bottom condensation plate.

This fountain is not furnished with trap. Provision must be made for trap behind wall.

Furnished in white or colors.

No. F-8355

Neo-Toric Vitreous China Drinking Fountain with spillway at rear of bowl. Supported on concealed wall hangers and wall screws.

Fittings, guarded angle stream anti-squirt bubbler with self-closing controlling valve, renewable unit, metal 4-arm handle, automatic volume regulator, and metal strainer.

Supply, ⅜-inch I.P. size to wall with loose key stop.

Trap, brass, 1¼-inch P pattern with I.P.S. outlet.

Exposed metal chromium-plated.

Wall to Front	inches	14½
Width Over All	inches	16
Approximate Shipping Weight	pounds	56

Can be furnished with vitreous china bottom condensation plate.

Furnished in white or colors.

Automatic volume controls are tested and regulated at the factory to operate under 10 to 100 pounds pressure. If fountain is to operate at a pressure less than 10 lbs., this should be noted on order. Water should be free from sediment.

No. F-8364-N

Floric Vitreous China Drinking Fountain with round bowl. Supported on wall bracket.

Fittings, angle stream anti-squirt bubbler, self-closing valve, metal 4-arm handle, metal strainer with tailpiece, and china strainer cover.

Supply pipe not furnished.

Trap, 1¼-inch P pattern, rough, with metal wall flange.

Outside Diameter Bowl	inches	9¾
Wall to Front of Bowl	inches	13
Approximate Shipping Weight	pounds	24

The opening from which the stream flows is above the overflow point of the receptacle and the metal guard is constructed to allow the escape of water should any mischievous attempt be made at squirting.

"Standard" Angle Stream Drinking Fountains have the approved slanting stream. This is also a sanitary safeguard since it assures the water falling clear of the fountain head.

Can be furnished with automatic pressure regulator when specified.

Furnished in white or colors.

No. F-8374-N

Cardic Vitreous China Alcove Drinking Fountain with wall flange. Supported on wall screws.

Fittings, closed style angle stream anti-squirt bubbler with self-closing controlling valve, renewable unit, metal 4-arm handle, automatic volume regulator, concealed stop with metal escutcheon and screwdriver slot, and strainer with coupling nut and 1¼-inch tailpiece.

Supply pipe and trap not furnished.

Exposed metal chromium plated.

Width Over All	inches	14¼
Height Over All	inches	26¼
Approximate Shipping Weight	pounds	75

Recess in wall required, approximately 24¾x13½x4½ inches. Provision must be made for trap behind wall.

Furnished in white or colors.

No. F-8381-N

Sanic Vitreous China Drinking Fountain with back. Supported on concealed wall hangers and wall screws.

Fittings, open style angle stream anti-squirt bubbler with self-closing controlling valve, renewable unit, metal 4-arm handle, and automatic volume regulator; gooseneck glass filler with self-closing valve, renewable unit, and volume regulator, and strainer with coupling nut and 1¼-in. tail-piece.

Supply pipe, ⅜-inch I.P. size to wall with loose key stop and wall escutcheon.

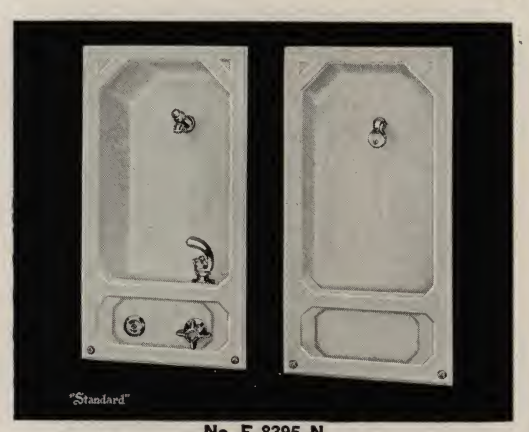
Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium-plated.

Wall to Front	inches	14
Width Over All	inches	18
Height of Back	inches	8
Approximate Shipping Weight	pounds	56

Elevated bubbler head above rim of bowl eliminates possible contamination of water by back syphonage.

Furnished in white or colors.



No. F-8395-N

Drinking Fountain and Cuspidor Combinations
Colman Vitreous China Recess
Drinking Fountain with wall flange. Supported on wall screws.

Fittings, angle stream anti-squirt bubbler with by-pass self-closing valve for connection to cuspidor, renewable unit, metal 4-arm handle and automatic volume regulator; glass filler with self-closing valve, renewable unit, and volume regulator; concealed stop with metal escutcheon and screw driver slot; metal strainer with coupling nut and 1¼-inch tail-piece.

Coldor Vitreous China Recess Cuspidor with wall flange. Supported on wall screws.

Fittings, flushing spreader with ⅜-inch I.P.S. slip inlet; strainer with 1¼-inch tail-piece.

Approximate Wall Opening, Each	inches	29x15x13½
Height, Each	inches	30
Width, Each	inches	16
Approximate Shipping Weight	pounds	210

Provision must be made for traps behind wall. Traps and concealed piping not furnished.

Furnished in white or colors.

No. F-8396

Drinking Fountain and Cuspidor Combinations
Neo-Toric Vitreous China Drinking Fountain with spillway at rear of bowl. Supported on concealed wall hangers and wall screws.

Fittings, angle stream anti-squirt bubbler with by-pass self-closing valve for connection to cuspidor, renewable unit, metal 4-arm handle and automatic volume regulator; metal strainer.

Supply, ⅜-inch I.P.S. to wall with loose key stop.

Trap, brass, 1¼-inch P pattern with I.P.S. outlet.

Sanidor Vitreous China Alcove Cuspidor with wall flange. For wall opening, 16x16x5 inches.

Fittings, flushing spreader with ⅜-inch I.P.S. slip inlet; strainer with coupling nut and 1¼-inch tail-piece.

		Fountain	Cuspidor
Wall to Front	inches	14½	5
Height	inches	10¾	16½
Width	inches	16	16½
Approximate Shipping Weight	pounds	53	60

Provision must be made for cuspidor trap behind wall. Cuspidor trap and concealed piping not furnished.

Furnished in white or colors.

No. P-8425-N

Avalon Enameled Cast Iron Drinking Fountain with back. Supported on concealed wall hanger.

Fittings, slant stream bubbler with metal guard, slotted screw volume regulator and strainer base, push button valve for bubbler, and push button glass filler.

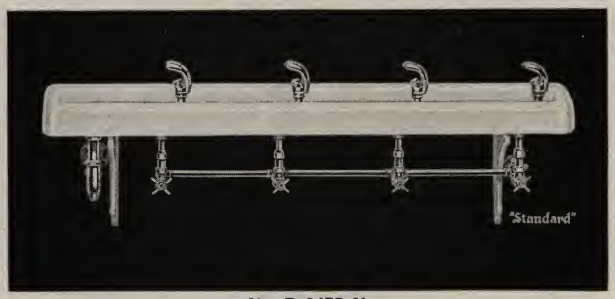
Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Wall to Front	inches	15
Width	inches	12½
Height	inches	13¾
Approximate Shipping Weight	pounds	63

Furnished in regular white enamel only.

This drinking fountain has the bubbler jet above rim of bowl so that nozzle orifice or opening will not be flooded if drain becomes clogged.



No. P-8475-N

Fulton Enameled Cast Iron Drinking Fountain with apron and end outlet. Supported on painted brackets.

Fittings, 4 angle stream anti-squirt bubblers with regulating screw, self-closing controlling valve with renewable unit and metal 4-arm handle, and drain plug with metal grid.

Supply pipe, ⅜-inch I.P. size to wall, with loose key stop and metal escutcheon.

Trap, 1¼-inch P pattern with metal wall flange.

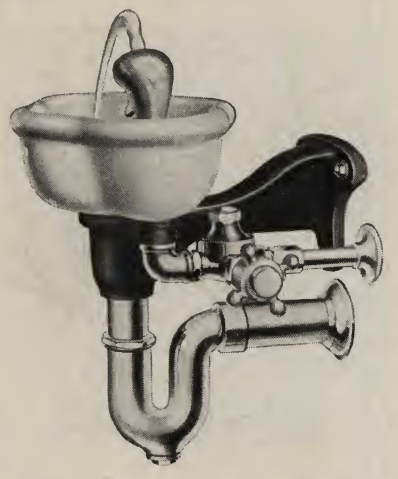
Exposed metal chromium plated.

Length	inches	42	54
No. of Bubblers		3	4
Wall to Front	inches	14¼	14¼
Apron	inches	3	3
Approximate Shipping Weight	pounds	105	135

Can be furnished with automatic volume regulators at added cost.

Available in white regular enamel only.

Furnished enameled inside only.



No. 2600 Wall Fountain with heavy vitreous china receptor. Supported on cast iron baked gray enameled bracket to wall.

Fittings, 2-stream mound building projector, automatic stream control, loose key volume regulator, and brass outlet strainer. Self-closing stop with metal cross handle, ⅜ inch I.P.S. supply pipe to wall.

Trap, 1¼-inch P pattern with drain pipe and metal wall escutcheon.

Exposed brass chromium-plated.

Receptor	inches	7½x10
Depth Receptor	inches	3
Projection from Wall	inches	11½
Approximate Shipping Weight	pounds	30

No. 2601

Heavy Vitreous China Wall Drinking Fountain with integral trap housing. Supported on concealed wall hangers.

Fittings, 2-stream, mound building projector and automatic stream control, brass strainer, and self-closing stop with cross handle.

Supply, ⅜-inch I.P. Thread to wall with loose key stop.

Trap, brass, 1¼-inch P pattern with I.P.T. outlet.

Exposed metal chromium-plated.

Wall to Front	inches	11¼
Width Over All	inches	12
Depth of Receptor	inches	3¼
Approximate Shipping Weight	pounds	40

Can also be furnished less trap and with waste fitting for drain to wall.

No. 2610

Halsey Taylor Vitreous China Wall Drinking Fountain with integral back. Supported on concealed wall hangers.

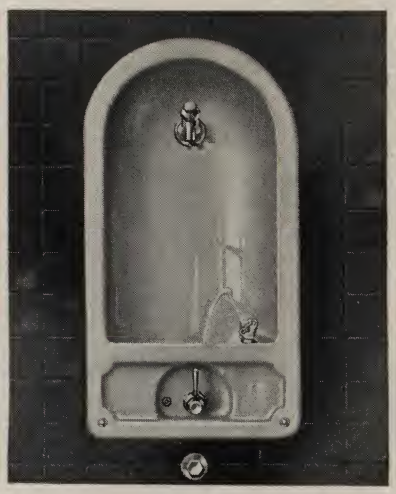
Fittings, two 2-stream mound building projector, automatic stream control, self-closing stops with 4-ball handles, loose key volume regulators and ⅜-inch iron pipe supply, and brass outlet strainer.

Trap, 1¼-inch P pattern.

Exposed metal chromium plated.

Wall to Front	inches	13
Length Over All	inches	24
Wall to Drinking Stream	inches	8
Depth of Receptor	inches	3½
Approximate Shipping Weight	pounds	90

Can be furnished in various colors to match woodwork, marble, or interior trim.



No. 2626

Halsey Taylor Vitreous China Recessed Wall Drinking Fountain with automatic stream control.

Fittings, 2-stream mound building projector, brass strainer, self-closing stop with metal lever handle, loose key regulator, and push button glass filling faucet through back.

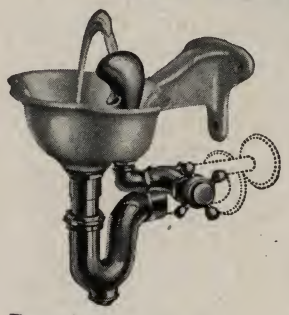
Supply pipe, ⅜-inch iron pipe thread.

Trap, 1½-inch P pattern with cleanout and metal wall flange.

Exposed metal chromium plated.

Width	inches	16
Height	inches	29½
Receptor Opening	inches	12½x20¾
Depth of Receptor	inches	10
Approximate Shipping Weight	pounds	110

No. 2566 Halsey Taylor Cantonment Type Wall Drinking Fountains



Cantonment type wall fountain with enameled cast iron receptor. Supported on wall screws.

Fittings, 2-stream mound building projector with ⅜-inch self-closing stop, 4-ball metal handle, loose key volume regulator, and brass strainer.

Supply pipe not furnished.

Trap, 1¼-inch P pattern.

Exposed brass chromium plated.

Receptor	inches	6½x9½
Projection from Wall	inches	11½
Approximate Shipping Weight	pounds	15

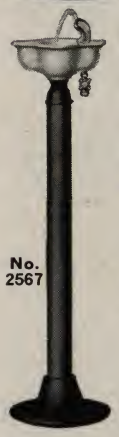
No. 2520-68 Halsey Taylor Pedestal Drinking Fountains

Enameled cast iron receptor set in cast iron protecting shield with two stream mound building projector and Taylor Automatic Stream Control, chromium-plated self-closing stop through 4-inch outside diameter steel tubing standard, loose key volume regulator concealed in base, concealed galvanized ⅜-in. supply and 1-in. waste pipe, heavy cast iron top and base.

By raising base cover, connections can be made without disturbing floor or concrete.

Receptor, 7½x10 inches. Diameter of adjustable cover, 16½ inches. Height of base cover, 10½ inches.

Height	inches	36	39	42
Ship. Wts		87	90	95

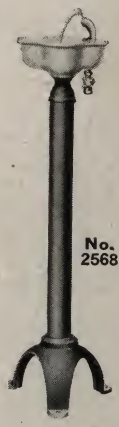


No. 2567

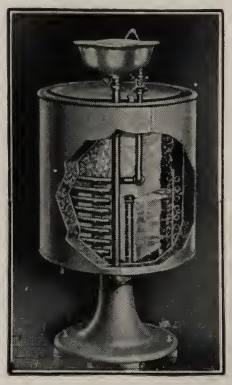
Nos. 2567 and 2568 Pedestal Drinking Fountain with heavy cast iron vitreous enameled bowl; 2½-inch O.D. steel tubing standard and cast iron closed base, chromium plated self-closing valve, loose key volume regulator, 2 stream mound building projector, ⅜-inch supply and 1-inch waste.

Height	inches	36	39
Receptor	inches	7½x9½	7½x9½
Base	inches	9½	9½
Approx. Ship. Weight	pounds	50	50

No. **2568** is same as No. 2567 except that it has open base for connections above floor.



No. 2568



No. 2570 Halsey Taylor Combination Cooler and Drinking Fountains

Powl cast iron, enameled all over, with C. P. brass strainer; brass outlet and supply connection mounted on cooler with cover top, and base made of cast iron. Body of tank coil guard made from galvanized sheet iron. Insulation: Re-granulated cork in side walls and pressed cork board in bottom and cover of cooler. Cooling coil ½-inch O. D. No. 20 gauge seamless brass tubing, tinned. Supply pipe with self-closing stop and volume regulator; 2-stream mound building projector.

Receptor Inches	Ht. to Top, In.	Ice Chamber	Receptor Base, In.	Diam.	Ship Wt. Lbs.	Price Each
7½x10	32	40	14	165	.....	

Halsey Taylor Electric Water Coolers

Cabinet is constructed of 17-gage steel, spot welded together and finished in metallic gray. Size of cabinet, 18x18x40½ inches high. The acid-resisting, cast iron, vitreous enameled head covers the entire top of the cooler; Halsey Taylor Mound Building Projector. The automatic control installed inside of cabinet maintains constant stream height regardless of pressure. Self-closing cross handle valve is located in top of cabinet.

All connections through back of cabinet; ⅜-inch I.P. inlet, 1¼-inch I.P. drain outlet, ⅜-inch I.P. cold water outlet for extra fountain.

Unit contains a brass 5-quart storage tank, tested at 140 pounds pressure, 2 inches of approved insulation; and cooling coil of tinned copper tubing located inside of storage tank. Equipped with automatic expansion valve and a thermostat which is in direct contact with the outlet water.

Compressor, slow speed single cylinder reciprocating type. Compressor assembly set in rubber to reduce vibration.

Refrigerant, Freon (F-12).

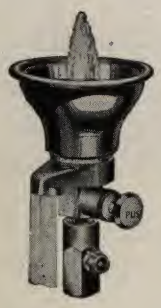
Capacity in gallons per hour is based on 80 to 50°F. with 80° air.

Motors are regularly furnished for 110-volt, 60-cycle a.c. single phase. Special motors furnished upon request.

No.	4AF	†612AF
*Capacity for Bubbler Service....g.p.h.	4	12
*Capacity for Tumbler Service....g.p.h.	..	6
Motor, Capacitor Type.....h.p.	⅙	¼
Approximate Shipping Weight.....lbs.	240	280

*Capacities vary according to the amount of water wasted.
†Equipped with pre-cooler.
Prices furnished upon request.

No. CA 2 Trenjer Drinking Fountain Bubblers



Trenjer Drinking Fountain Bubbler with metal bowl, self-closing valve with push button on side, loose key control valve, and vertical shank threaded ½ or ⅜-inch iron pipe female.

Top of bowl to end of shank, 6¾ inches.

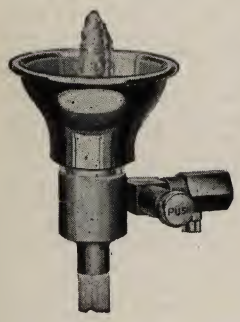
With Metal Bowl

No. CA **2**, Chromium-Plated...each ....

With Vitreous China Bowl

No. CA **2**, Chromium-Plated...each ....

No. CA 3 Trenjer Drinking Fountain Bubblers



Trenjer Drinking Fountain Bubbler with metal bowl, self-closing valve with push button on side, loose key control valve, and shank to wall threaded ½ or ⅜-inch iron pipe female.

Center of bubbler to end of shank, 3⅞ inches.

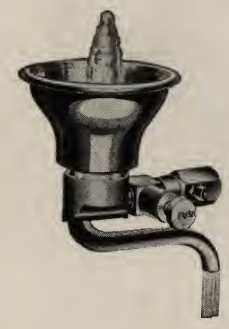
With Metal Bowl

No. CA, **3**, Chromium-Plated.....each ....

With Vitreous China Bowl

No. CA **3**, Chromium-Plated.....each ....

No. CA4 Trenjer Drinking Fountain Bubblers



Trenjer Drinking Fountain Bubbler with metal bowl, self-closing valve with push button on side, loose key control valve, and shank to wall threaded ½-inch iron pipe female.

Center of bubbler to end of shank, 3⅞ inches.

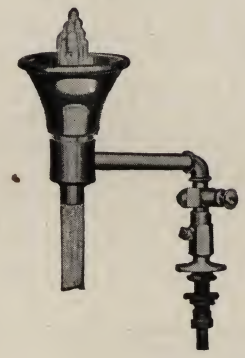
With Metal Bowl

No. CA**4**, Nickel-Plated.each ....
No. CA**4**, Chromium-Plated .....each ....

With Vitreous China Bowl

No. CA**4**, Nickel-Plated.each ....
No. CA**4**, Chromium-Plated .....each ....

No. CA 6 Trenjer Drinking Fountain Bubblers



Trenjer Drinking Fountain Bubblers with metal bowl, push button self-closing controlling valve, supply pipe, and coupling threaded ¼-inch iron pipe male.

This drinking fountain can be installed on lavatories, and will fit in regular faucet hole.

With Metal Bowl

No. CA **6**, C.P.....each ....

With Vitreous China Bowl

No. CA **6**, C.P.....each ....

No. 2586 Fountain Heads

Vitreous china 7½x10½-inch receptor; brass strainer; self-closing stop has regulator, union connection. 2-stream mound building projector and automatic stream control. Exposed fittings chromium plated. Supply is ⅜-inch; waste is 1¼ or 1½-inch. Weight, 14 pounds.

No. **2586**.....each .....

No. 2505 Halsey Taylor Fountain Heads

Six-inch C. P. spun brass bowl, self-closing push button valve, volume regulator, single stream angle jet projector with hood guard, self-closing push button on side for glass filler; ⅜-inch supply, ⅜-inch outlet, I. P. threads.

N. P...each .... C.P.. each ....

No. 2744 Drinking Fountain Heads

Chromium plated cast brass 2-stream mound building projector with integral guard, self-closing stop and volume regulator. Inlet, ½-inch outside I.P. thread.

No. **2744**.....each .....

No. 2298 Drinking Fountain Heads

Chromium plated cast brass 2-stream mound building projector with integral guard. Inlet, ⅜-inch inside I.P. thread.

Designed to replace present unsanitary bubblers or drinking fountains already installed.

No. **2298**.....each .....

No. 2742 Drinking Fountain Heads

Chromium plated brass with 2-stream mound building projector volume regulator, and self-closing lever handle stop; lavatory tail-piece; hood guard; supply ½-inch iron pipe size.

Shipping weight, 4 pounds.

No. **2742**.....each ....

No. B-844 Re-Nu Self-Closing Angle Stream Bubblers

Chromard self-closing angle stream bubbler with Re-Nu parts, metal 4-arm handle, regulating screw, shank. and ¼-inch outside I.P. thread tail-piece.

No. B-**844**.....each ....

Angle Stream Anti-Squirt Bubbler Heads

No. B-849

Angle stream anti-squirt bubbler head with regulating screw and strainer base. For fountains with center outlets.

Exposed metal Chromard finish.

No. B-**848**, with Strainer Base.each ....

Can also be furnished less flange and shank, with ⅜-inch inside I.P. thread inlet.

No. B-**849**, same as above except with threaded shank and union tail-piece, threaded ¼-inch I.P. size.

No. B-**849**.....each

No. 1196 Halsey Taylor Automatic Stream Regulators

Heavy brass throughout. This regulator is balance valve diaphragm type and maintains a uniform height of drinking stream under varying water pressures without waste of water. Connection threaded inside I.P.

I. P. Size	inches	¼	⅜
No. **1196**, Rough Brass	each	.....	.....
No. **1196**, Chromium Plated	each	.....	.....

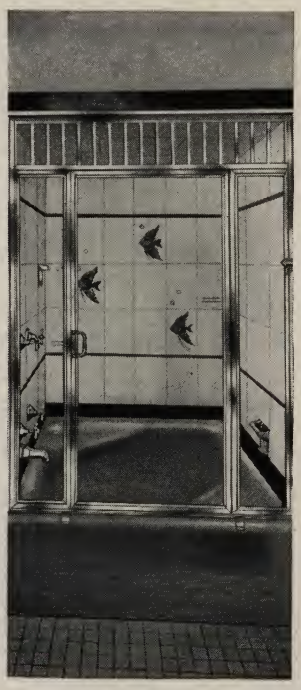
No. 2000-C Fiat Glass Shower Cabinets

Background walls and top are of 16-gage enameling iron, finished in porcelain enamel. Pre-cast terrazzo receptor with brass drain cast integral.

Corner entrance design. Front glass panels and door of Senior construction; brass chromium plated.

Size	inches	**36x36**	**42x42**
Shipping Weight	pounds	...	...

Fiat Enclosures for Neo-Angle Baths



No. N-401-S

The Fiat Glass Enclosure may be had in different designs for Neo-angle tubs—corner standing and recessed.

With brass chrome-plated frames or aluminum in Alumilite finish.

Heavy glass is set in rubber U channels.

Doors have continuous piano hinge, double action friction catch, water deflector with drain gutter, and offset door handles.

All enclosures are custom-built to measurements actually taken on the job.

Height of Panels	inches	60
Height of Grille	inches	8
Height Overall	inches	68
Width of Door Opening	inches	26
Approximate Shipping Weight	pounds	...

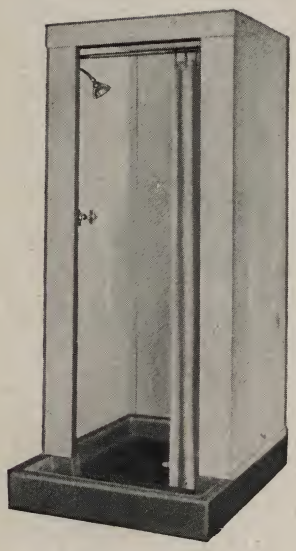
No. 2-A Fiat Admiral Shower Cabinets

Walls and top finished in porcelain enamel; pre-cast terrazzo receptor in regular, corner and extended types.

Exterior surfaces, except front, regularly finished in rough vitreous enamel ground coat. When ordering, state which side, if any, should be finished same as interior.

Furnished complete with chromium plated valves and head; soap dish.

Curtain extra.

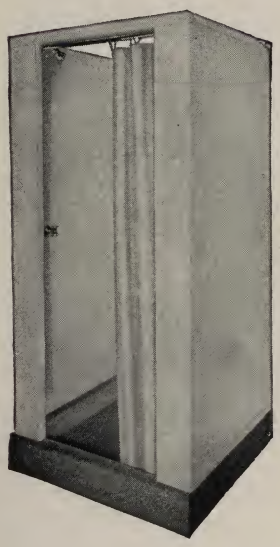


No. 6 Fiat Ensign Shower Cabinets

Walls and top finished inside and out in baked-on enamel; pre-cast terrazzo receptor in regular, corner and extended types.

Furnished complete with chromium plated valves and head; soap dish.

Curtain extra.



No. 15 Fiat Marine Shower Cabinets

Walls finished inside and out in baked-on enamel; pre-cast Art-tex receptor in regular, corner and extended types.

Hollow metal door stile construction.

Furnished complete with chromium plated valves and head; soap dish, chromium plated curtain rod and curtain.

No. 17 Fiat Cadet Shower Cabinets

Walls finished inside and out in baked-on enamel; pre-cast stone-tex receptor (semi-flat type with 1-inch shoulder) in regular and corner types.

Furnished complete with chromium plated valves and head, soap dish, curtain and black enameled curtain rod.

No. 18 Fiat Skipper Shower Cabinets

Available either without finish, or with baked-on enamel finish; pre-cast stone-tex receptor (flat type) in regular type only.

Furnished complete with dull chrome valves and head, soap dish, black enameled curtain rod and curtain.

Size, 30x30x76 inches.

Fiat Junior Shower Doors

For installation on marble, tile or structural glass.

Construction features: Frame of ½x ¾-inch seamless brass tubing with extruded brass mouldings. Double formed 18 gage brass; strike side of two channels and tension springs forming the adjustable jamb. Specially constructed, leakproof continuous brass piano hinge. Two bullet catches, guaranteed against door binding. Glass, clear or obscure, set into a heavy rubber U channel. Special offset design handles on both sides of door. Water deflector, made of 18 gage brass with gutter to prevent water from dripping onto floor when door is opened. Grille vent, 7-inch high bars of ⅜x⅜-inch seamless brass tubing.

Heavy chromium plating finish.

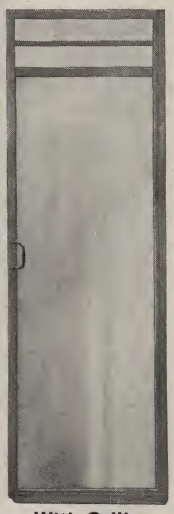
When ordering state the hinging desired (right or left as door is faced) and whether for marble tile or structural glass showers.

Size.....	..inches	**24x72**
Shipping Weight.....	pounds	80

Fiat Zephyr Shower Doors

For installation on tile or structural glass showers.

Construction features are as follows. One-piece extruded aluminum alloy frame. Extruded aluminum alloy jamb. Specially constructed, leakproof continuous aluminum piano hinge. Two bullet locks, guaranteed against door binding. Clear or obscure glass, set into a heavy rubber U channel. Special off-set design handles on both sides of the door.



With Grille

Water deflector is made of extruded aluminum with gutter to prevent water from dripping into the floor when the door is opened. Vent is horizontal solid aluminum towel bar.

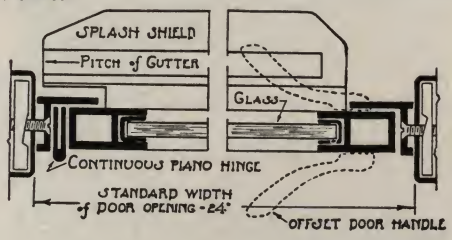
Alumilite finish.

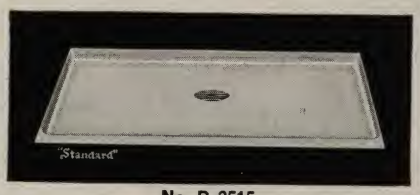
When ordering state the hinging desired (right or left as door is faced) and whether for marble, tile or structural glass showers.

	*Without Grille	With Grille
Size.....inches	24x64	24x72
Shipping Weight..pounds	50	75

*Low type door.

Additional charge for special sizes.



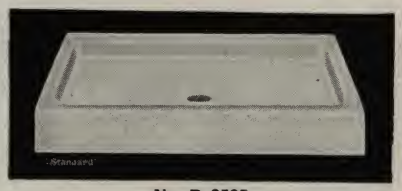


No. P-2515

Enameled Cast Iron Recess Shower Receptor for recess, flange sets level with floor, with brass strainer, and drain connection for 2-inch iron pipe.

Nominal Size	inches	38x38
Width Overall	inches	39¾
Front to Back Overall	inches	40
Depth at Outlet	inches	2¾
Approximate Shipping Weight	pounds	215

Furnished in acid-resisting white or colored enamel.



No. P-2525

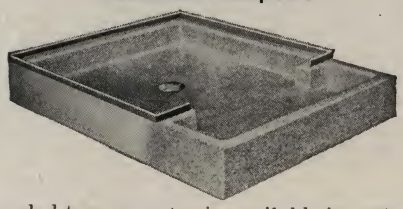
Enameled Cast Iron Recess Shower Receptor with apron to tile in walls and floor, brass strainer, and drain connection for 2-inch iron pipe.

Nominal Size	inches	38x38
Width Overall	inches	39¾
Front to Back Overall	inches	40
Depth at Outlet	inches	4
Approximate Shipping Weight	pounds	240

Furnished in acid-resisting white or colored enamel.

Fiat Pre-Cast Receptors

Extended Receptors

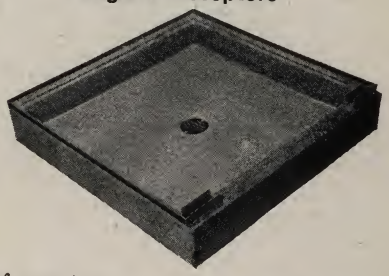


The extended type receptor is available in certain sizes on all models except Skipper and Cadet.

Designed to remove all possibility of water splashing from the receptor on to the floor of the room. It also affords one a convenient place to stand either before or after the shower.

Sizes, 30x42, 32x44, 34x46, 36x42, 36x48, 42x48 inches.

Regular Receptors



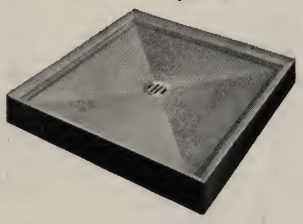
On a regular receptor drain is always located in center except when only one side of receptor has a deluxe shoulder. In that case drain is located at what would be the center if receptor had no deluxe shoulder. The ⅝-inch shoulder is added to dimensions of receptor.

Sizes, 30x30, 30x32, 32x32, 34x34, 30x36, 36x30, 36x36, 36x42, 42x36, 42x42, 46x36, 48x30, 48x36, 46x44 inches.

Corner Receptors

Size.....in.	36x36	42x42
Lgth. Along Either Side Wall.....in.	36⅞	42⅞
Side Wall to Corner of Threshold.....in.	14 5/16	19 5/16
Width of Threshold.in.	31½	33½
Ctr. of Outlet to Either Side Wall.....in.	13½	16½

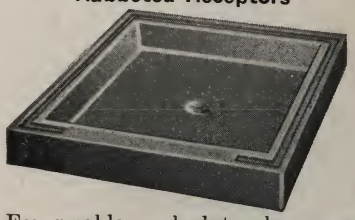
Flat Receptors



Used with Skipper shower cabinet. Terrazzo and Art-Tex types used in conjunction with tile shower walls.

Sizes, 30x30, 32x32, 36x36, 42x42 inches.

Rabbeted Receptors



For marble and slate shower enclosure wall construction. Receptor is rabbeted so that the slate or marble walls can be set in receptor body and cemented in.

Sizes, 30x30, 32x32, 30x36, 36x30, 36x36, 42x42, 72x36 inches.

Special Receptors

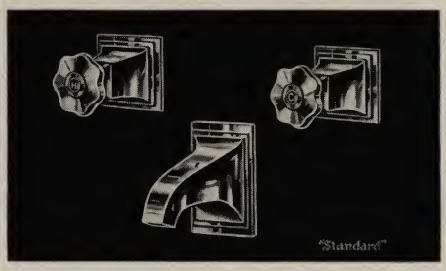
A special receptor of any kind or size can be furnished upon receipt of complete details of requirements of particular installation for which the receptor is to be used.

Compositions

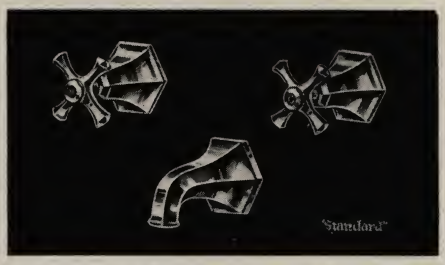
Terrazzo—Black and white marble chips (Nos. 0 and 1), white portland cement. **Art-Tex**—Black Traprock chips (No. 1), white and gray portland cement.

"Standard" Brass Trimmed Fittings

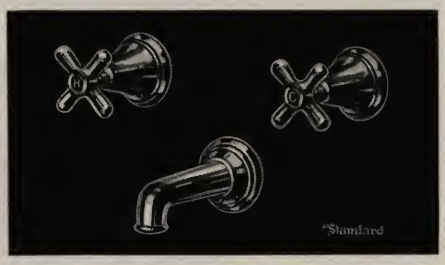
Bath Fittings



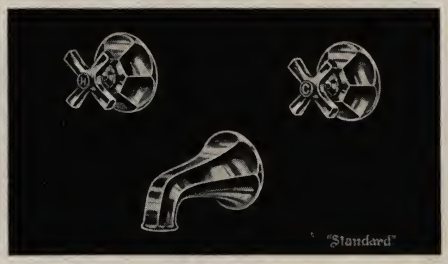
Neo-Classic Trim.—Has outstanding and compelling artistic worth. Its classic straight lines and receding planes are adapted to modern construction.



Waldorf Trim.—A late, most artistic rendering of the hexagonal motif. Very appropriate on all cut-off corner design fixtures, though it blends well with all "Standard" fixtures.

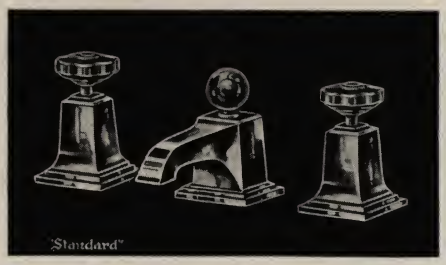


Colonial Trim.—A beautiful blending of curved lines, with concaved cone of the escutcheon rising to new and more pleasing height. Conservative but not common; distinctive but not too unusual; a rich design of pleasing simplicity.



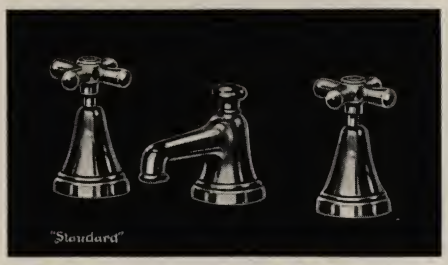
Standard Trim.—A design of universal appeal. It is attractive and will harmonize pleasingly with any "Standard" Plumbing Fixture.

Lavatory Fittings

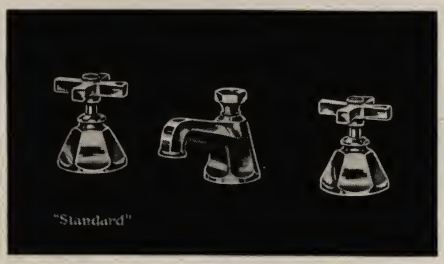


Neo-Classic Trim.—Especially pleasing on the Towerlyn lavatory, Neo-Angle bath and other fixtures with Neo-Classic motif. Also appropriate on most of the finer type fixtures.

Waldorf Trim.—Designed to meet the demand of those who desire something different from the usual round design, and yet more distinctive than the ordinary 6-sided fitting.



Colonial Trim.—Any "Standard" lavatory, bath or shower is enhanced by the Colonial Trim which costs but little more than Standard Trim. It is essentially practical in its ease of cleaning. A truly beautiful design.



Standard Trim.—This design is always correct. It is lower in height but high in quality, and costs less than other trims described above.

Crystal Lever Handles and Knobs

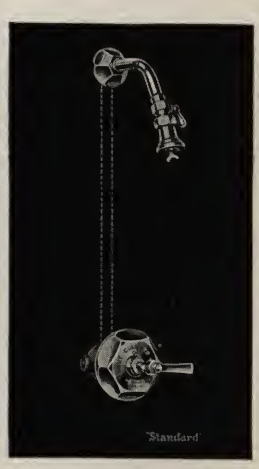
Crystal lever handles and crystal knobs furnish an unusual and pleasing note.

Available on Neo-Classic, Waldorf and Colonial trims.

Specify if desired.

No. B-158 Re-Nu Built-In Showers

Standard Trim



All-metal built-in shower with ½-inch Re-Nu mixing valve with lever handle and dial plate, bent shower arm and escutcheon, and Boyd adjustable shower head with ball joint and volume regulator.

Exposed metal Chromard finish.

Approximate Shipping Weight.....pounds 13

No. B-170 Re-Nu Built-In Showers

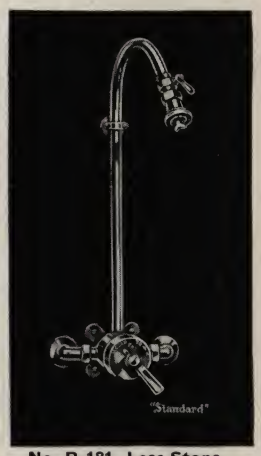
Standard Trim

All-metal built-in shower with two ½-inch Re-Nu compression shower valves with union couplings, cross handles, and escutcheons, bent shower arm and escutcheon, and Boyd adjustable shower head with ball joint.

Exposed metal Chromard finish.

No. B-**170**.....each ....

Re-Nu Exposed Showers



No. B-181, Less Stops
No. B-182, With Stops

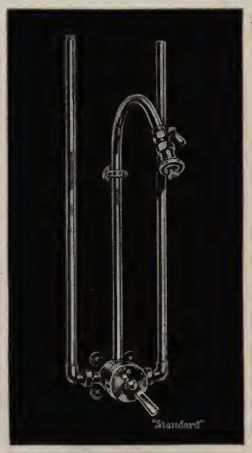
All-metal exposed shower with ½-inch Re-Nu mixing valve with lever handle, dial plate, wall support, union elbow supplies to wall, gooseneck riser, riser clamp, and Boyd adjustable shower head with ball joint and volume regulator.

Exposed metal Chromard finish.

Approximate Shipping Weight.....pounds 16

Re-Nu Exposed Mixing Valve Showers

Standard Trim



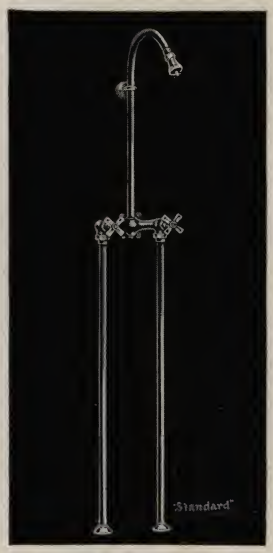
No. B-184

All-metal chromard finish built-in shower with ½-inch Re-Nu mixing valve with lever handle dial plate, wall support, union elbows, supply pipes to ceiling with escutcheons, gooseneck riser, riser clamp, and Boyd adjustable shower head with ball joint and volume regulator.

No. B-**184**, Supply Pipes to Ceiling.....each .....
No. B-**185**, Supply Pipes to Floor.....each .....

Re-Nu Exposed Showers

Standard Trim



No. B-195

All-metal shower with two ½-inch Re-Nu compression valves with union couplings, cross handles, wall flange, ½-inch supply pipes to floor with escutcheons, bent shower arm and escutcheon, and Boyd adjustable shower head with ball joint.

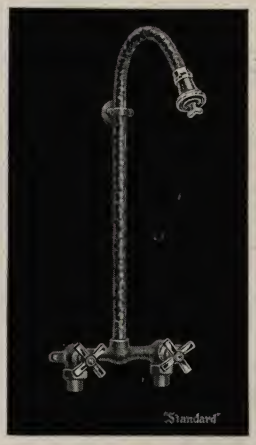
Exposed metal Chromard finish.

No. B-**195**, Floor Supplies.....each ....

No. B-**194**, Ceiling Supplies.....each ....

Shower Baths

Industrial Type



No. B-250 for Floor Supplies
No. B-254 for Ceiling Supplies

All-metal exposed shower with two ½-inch rough compression valves with cross handles, ½-inch union couplings for floor supplies, ½-inch galvanized gooseneck riser, riser clamp, and rigid joint Boyd shower head with fine to coarse spray adjustment.

Exposed brass rough Chromard finish.

Approximate Shipping Weight.....pounds 10

No. B-258 Shower Baths

Industrial Type

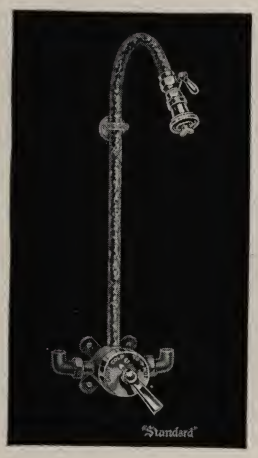
All-metal exposed shower with hot and cold compression Re-Nu valves with cross handles. Caps, stems, handles, and ½-inch union couplings are polished Chromard. Gooseneck riser is galvanized iron; valve body is rough Chromard. Polished Chromard Boyd adjustable shower head with rigid joint.

This shower, requiring horizontal supply pipes is ideal for battery type installations.

Approximate Shipping Weight.....pounds 9

No. B-261 Re-Nu Exposed Showers

Industrial Type



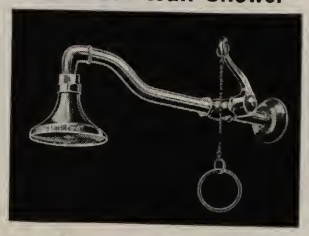
All-metal exposed shower with ½-inch rough Re-Nu mixing valve with lever handle, polished dial plate, wall support elbow union couplings for supplies to floor, wall, or ceiling, galvanized gooseneck riser, riser clamp, and Boyd adjustable shower head with rigid joint and volume regulator.

Exposed brass rough Chromard finish.

Approximate Shipping Weight.....pounds 14

Self-Closing Wall and Ceiling Showers

No. B-262 Wall Shower



Chromard finish shower with ½-inch shower arm to wall, 4-inch cast brass head with removable face, ½-inch self-closing valve with chain and pull and wall plate.

No. B-264 Ceiling Shower

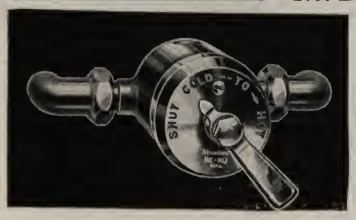
Same as No. B-262 except with shower arm to ceiling.
Approximate Shipping Weight.....pounds 8

No. B-201 Re-Nu Mixing Valves

Standard Trim

Chromard finish built-in Re-Nu mixing valve with metal dial plate and handle.

Size, I.P....inches	½	¾
No. B-201....each	....	....

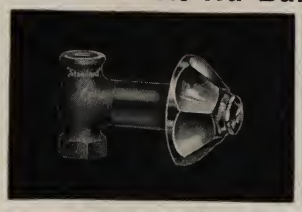


No. B-202 Re-Nu Mixing Valves

Chromard finish, exposed Re-Nu mixing valve with metal dial plate, lever handle, and union elbows on inlets.

Size I.P.T....in.	½
No. B-202...each	....

Re-Nu Built-In Stops



Standard Trim

Chromard finish straight stop with screw-driver slotted stem and escutcheon.

Size, I.P. Thread.in.	½
No. B-213, as Described.....each	....
No. B-213-U, with Union Coupling.ea.	....

Josam Moderator Mixing Valves

Exposed Type

Concealed Type

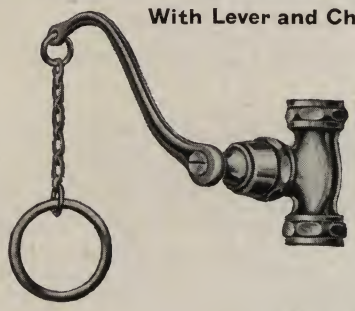
This instant hydraulic type action mixing valve provides positive protection against accidental scalding. Utmost safety is assured, because the hot water cannot be turned on before the cold water is running—hot water cannot run after the cold water is dangerously reduced or ceases entirely. Fool-proof design, no springs to stick, no diaphragms to wear out, no hesitant controls.

Exposed parts chromium plated.

Size I.P.T.....inches	½
Exposed Type.....each	....
Concealed Type.....each	....

No. 3490 Self-Closing Shower Stops

With Lever and Chain



Size.....inches	½	¾
No. 3490, Finished.....each	....	....
No. 3490, Nickel-Plated.....each	....	....
No. 3490, Chromium-Plated.....each	....	....

No. 19 Boekel Rain Shower Heads

Made of copper, polished and nickel plated. Sizes 4, 5, and 6 inches are furnished with ½-inch I.P. female thread.

Sizes 7 and 8 inches are furnished with ¾-inch I.P. female thread. Extra charge for male thread nipple.

Size....inches	4	5	6	7	8
Each.....	...	...	...	...	...

Boyd Shower Heads

Chromard finish cast brass shower head with ½-inch I.P. size inlet. Spray adjustment, fine or coarse, can be had by turning the stem with wing grip. When stem is in full open position, head is flushed of sediment, dirt, or pipe scale.

No. B-**268**, with Ball Joint..each ....
No. B-**269**, with Rigid Joint.each ....

Victor Shower Heads

Chromard finish cast brass shower head with ½-inch I.P. size inlet. The lever controls spray, mist or rain. When lever is placed in a neutral position, the head is flushed of sediment, dirt, or pipe scale.

No. B-**274**, with Ball Joint..each ....
No. B-**273**, with Rigid Joint.each ....

No. B-278 Institution Shower Heads

Cast brass, 5-in.face, sediment screen, and extended drip shield. Tapped ½-in. I.P.S. for exposed top or concealed back supply.

Height.....inches 10¾
Width.....inches 9
No. B-**278**, Nickel-Plated...each ....
No. B-**278**, Chromard Finish.each ....

Cast Brass Shower Heads

Chromard finish cast brass shower head with sediment screen, removable face, and adjustable ball joint. Inlet, ½ inch I.P. thread.

Diameter of Head.....inches 4
No. B-**282**, as Described....each ....
No. B-**281**, with Volume Control.....each ....

Speakman Plastic Adjusta-Spray Shower Heads

A plastic, self-cleaning spray head. Will withstand the action of extremely hot water without distorting or softening and at the same time maintain the same fine individual spray jets. Resistant to corrosion.

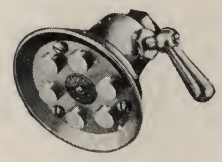
No. SP-2400

No. SP-2410

The grooves in the outer edge of the face plate are so arranged as to discharge a full invigorating spray, eliminating the possibility of a hollow, round spray with a dry center. Female i.p.s., ½ inch.

No. SP-**2400**, Rigid Joint.....each ....
No. SP-**2410**, Ball Joint.....each ....

No. 2250 Speakman Anystream Self-Cleaning Shower Heads



This shower head can vary the force and fineness of its spray simply by a turn of a lever. The same lever makes it self cleaning. No half-sprays or off-side streams of water from a stopped-up spray head. No bother of cleaning. A turn of the lever and all accumulated sediment is flushed away.

Finished in chromium plate; not affected by salt water. Will not dull or wear off.

Easily installed on any shower; can be furnished with any new installation. With ½-inch female inlet.

Can also be furnished with adjustable ball joint.

No. **2250**, Unpolished Chromium.....each .....
No. **2250**, Chromium-Plated.....each .....

Speakman Adjusta-Spray Showerheads

Chromium-plated cast brass self-cleaning shower head with adjustable spray feature.

Threaded ½-inch I.P. size.

No. 2400

Rigid.
No. **2400**.....each ....

No. 2410

With integral ball joint.
No. **2410**.....each ....

No. 2420

With integral ball joint, lever handle volume control.
No. **2420**.....each ....

No. 2430

Diamond trim with integral ball joint.
No. **2430**.....each ....

No. 2300 Adjustable Ball Joints

Chromium-plated brass adjustable ball joint for use on shower head.

Size.....inches ½ ¾
No. **2300**.....each ....

Sylphon Hot-Cold Water Mixers

150 Pounds Maximum Pressure of Either Hot or Cold Water

Suitable for any installation where the differential between the hot and the cold water pressure does not exceed 15 pounds.

This mixer is used for reducing outlet temperatures of instantaneous indirect and submerged water heaters; controlling temperature of domestic hot water supply delivered to fixtures from all types of storage water heaters; and for controlling temperature of hot water to banks of showers and lavatories in industrial and public installations.

Made entirely of brass. Sylphon bellows packless construction used. The thermostat operates on the liquid expansion principle to position a poppet in a 3-way valve and thus portions hot and cold water to produce tempered water at the temperature for which adjustment is set.

Temperature Ranges

The standard temperature range of No. 908 is 140 to 180°F., and of No. 908-X, 100 to 160°F. Other ranges available at extra cost.

Capacities

Capacity at the warm or mixed water outlet of this mixer is given below and is based on the mixer discharging to atmosphere; given in gallons per minute.

No.....	908-X	908
Size.....inches	¾ and 1	1¼, 1½ and 2
15-Lb. Supply Pressure.....gpm.	15	47
30-Lb. Supply Pressure.....gpm.	20½	67
45-Lb. Supply Pressure.....gpm.	25	81
60-Lb. Supply Pressure.....gpm.	30	93

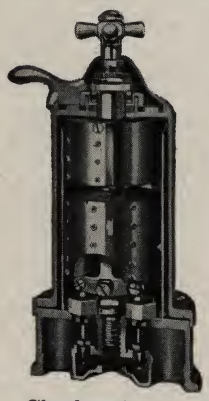
Prices upon application.

Model B Leonard Thermostatic Water Mixing Valves

B-10

B-40

B-120



By the use of this valve temperature of water supply to plumbing fixtures can be predetermined and maintained regardless of variations in pressure. If pressure of hot or cold supply changes after valve is set, thermostatic coils instantly adjust the balanced valves to give the predetermined temperature of water. If cold or hot water supply to valve is suddenly shut off, valve will automatically shut off supply to fixture.

Furnished with temperature scale, i.e., 80, 90, 100, 110, 120 degrees. Special temperature markings can be furnished.

Furnished with strainers and 4-arm metal handle.

Check valves are furnished on all models except B-105, B-120, and B-200. Check valves are not furnished with Models B-105, B-120, and B-200 but should be installed in the supply pipes.

Model B Valves for concealed piping are supplied with flange. When ordering valves for concealed piping, always state whether valve is to be placed in a horizontal or vertical position. If not specified, concealed valves will be furnished for horizontal installation.

Model	Chromium or Nickel-Plated Rough Finish Each	Chromium or Nickel-Plated Finish Each	Piping	†Cap. Gal. per Min.	I. P. Size In. Inlets	I. P. Size In. Outlet
*B- 5	.....	.....	Exposed	5	½	¾
B- 10	.....	.....	Exposed	15	½	¾
B- 10	.....	.....	Concealed	15	½	¾
B- 20	.....	.....	Exposed	24	¾	1
B- 20	.....	.....	Concealed	24	¾	1
B- 40	.....	.....	Exposed	45	1	1¼
B- 40	.....	.....	Concealed	45	1	1¼
B- 60	.....	.....	Exposed	63	1¼	1½
B- 60	.....	.....	Concealed	63	1¼	1½
B-105	.....	.....	Exposed	105	1½	2
B-120	.....	.....	Exposed	125	1½	2
B-200	.....	.....	Exposed	200	2	2½

*Baby bath model.
†Capacities under 45 pounds pressure.

Lock Escutcheons

Lock escutcheons can be furnished for temperature and volume control or for temperature control only at no extra charge.

Wall Brackets

For Models B-5, B-10, and B-20

Description	Rough Finish Each	Chromium or Nickel-Plated Finish Each
Shell Type	.....	.....
Base Type	.....	.....
For Models B-40 and B-60		
Shell Type	.....	.....
Base Type	.....	.....
For Models B-105, B-120, and B-200		
Base Type	.....	.....

Thermometers

V shape, metal case, glass front, ⅜-inch thread.

Straight Stem	‡	.....
Angle Stem	‡	.....

‡Not furnished.

Type L-9-E Leonard Thermostatic Water Mixing Valves

Exposed Type

This valve will provide blended water at a known temperature. Unequal pressure in the hot and cold water supplies do not affect the accuracy of operation. If either the hot or cold water supply should cease entirely the valve would shut off automatically, a possibility for which the ordinary mixing valve does not provide.

The exposed type of valve has a capacity of 8 gallons per minute under 45 pounds pressure. Inlets are ½-inch iron pipe size. Outlet is ½-inch iron pipe size.

It is compactly built, as it extends into the shower stall only 6¼ inches, and the base casting is so designed that it permits the supply pipes to and from the valve to set practically flush with the wall.

The Type L-9 valve is particularly adapted for hotel use, as all working parts are assembled on the face plate, which is removed by unscrewing the screws on flange. All parts are standardized and interchangeable, thus making it possible to install a new face plate and working parts while other is being cleaned or parts replaced.

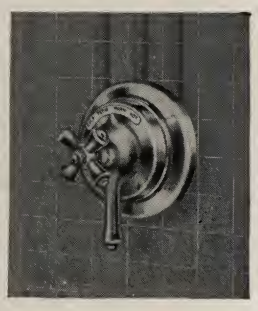
Furnished with word scale only: Cold, Tepid, Warm, Hot

Check valves are not furnished but should be installed when valve is piped for more than one fixture.

Description	Chromium or Nickel-Plated Finish Each
Type L-9-E, Exposed Piping, with 4-Arm Metal Handle and Metal Lever	.....
Type L-9-E, Exposed Piping, with Elbow Control	.....

Type L-9-C Leonard Thermostatic Water Mixing Valves

Concealed Type



This valve has adjustable safety stops under the regulating pointer escutcheon which limit the range of bathing temperature. By removing or resetting these stops hot water can be drawn through the valve.

The concealed type of valve has a capacity of 8 gallons per minute under 45 pounds pressure. Inlets are ½-inch iron pipe size. The outlet is ½-inch iron pipe size.

This valve can be placed in practically any partition as it is compactly built and requires only a space of 4 inches. The front of the valve extends 4¾ inches from the wall. The diameter of the wall escutcheon is 6¾ inches.

All operating parts are assembled on the face plate and are removed as one unit. All repacking can be done from the front without disturbing base casting in the wall.

One-quarter turn of hand wheel opens or closes the valve.

Furnished with word scale only: Cold, Tepid, Warm, Hot.

Check valves are not furnished but should be installed when valve is piped for more than one fixture.

Also furnished in octagon design.

Description	Chromium or Nickel-Plated Finish Each
Type L-9-C, Concealed Piping with Flange, with 4-Arm Metal Handle and Metal Lever	.....
Type L-9-C, Concealed Piping with Flange, with Elbow Control	.....

Sarco Water Blenders

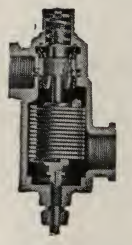
The Sarco Blender is used for gang showers and wash basins in factories, to provide wash water in dairies, packing or canning plants, and for process applications. It is also employed, connected in reverse, as a temperature control of cooling water or brine, where a portion of the fluid can be recirculated.

It is a simple, compact thermostatic mixing valve to blend hot and cold water and automatically deliver blended water at any desired temperature. Adjustable in the field 15° lower and 40° higher than factory calibration. Protected against over heating up to 50° above calibrated temperature. Maximum working pressure, 150 pounds.

Size Inches	Iron Body Each	All Brass Each	*Capacity, Gallons per Hr.	Ship. Wt. Lb.
¾	$60.00	$68.00	470	31
1	65.00	73.00	850	31
1¼	70.00	80.00	1650	34
1½	78.00	90.00	2500	34
2	92.00	105.00	5000	40
2½	160.00	170.00	6000	45
3	185.00	210.00	8000	53
†4	275.00	435.00	13500	120

*With 10 pounds pressure drop.
†All flanged connections.

Taco Tempering Valves



Designed to proportion accurately both hot and cold water entering valve so that required outlet temperature will remain constant thermostatically. A temperature range from 135° to 200°F. can be obtained, with reasonable accuracy. Valve body is a heavy bronze casting; thermostatic element is entirely of brass, bronze and copper. By turning adjustment stem on bottom of valve, outlet temperature can be lowered or raised.

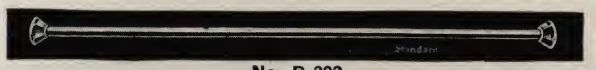
Should be installed so that there is equal pressure on both sides of valve. Thoroughly tested for accuracy and to a working pressure of 125 pounds.

Size.....inches	*T	1	1½	2
Each.....	$24.00	28.00	56.00	80.00
Length.....inches	8⅜	8⅜	9 1/16	9 7/16
Ship. Weight.....pounds	7	7	10	13

*Cold inlet, ½ inch; hot inlet and tempered outlet, ¾ inch.

Shower Curtain Rods

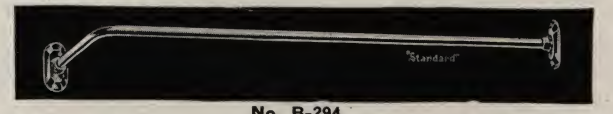
Standard Trim



No. B-293

Chromard recess 1-inch O.D. curtain rod with wall flanges.

Size.....	36″	38″	42″	4′	*5′	*5½′	*6′
No. B-293...ea.	....	....	....	....	....	....	....



No. B-294

Chromard corner 1-inch O.D. curtain rod with wall flanges

Size.....feet	*5	*5½	*6
No. B-294.....each	....	....	....

*These sizes are also available with Waldorf, Neo-Classic, and Colonial trim at additional cost.

No. B-296 D Type Shower Curtain Rods

Chromard finish 42x30-inch D type ⅝-inch O.D. curtain rod with wall flanges.

No. B-296 ....each .....

Shower Rods and Curtains

For Neo-Angle Baths

No. B295 Telescopic Curtain Rods for Recess Baths

Extended

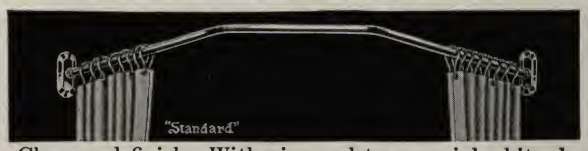
Closed

For use with the Recess Neo-Angle Bath. When not in use, it telescopes into a single short length and is firmly hooked along the side wall. When needed for the shower, one motion lifts the end from its hook, pulls out the rod and curtain to full length, and fastens on to hook on the other side wall. Curtain is fashioned to fit inside of bath rim.

White duck curtain. If curtain in color or other material than white duck is wanted, specify B295 less curtain.

Chromard finish.

No. B291 for Corner Baths



Chromard finish. With pins and two special white duck curtains with holdback hooks and chains.

If curtain in color or other material than white duck is wanted, specify B291 less curtain.

No. 1422 Curtain Rod Flanges

Polished chromium.

Adjustable heavy cast brass flange with set and wood screws.

Packed 1 pair in a box, 150 boxes in a carton.

No. 1422, Slips Rod Size, 15/16-Inch O.D.....each ....
No. 1422, Slips Rod Size, 1-Inch O.D.....each ....

No. S-173 Shower Curtain Pins

Chromium plated, 4 ball, snap type, roller action, shower curtain pin.

Extra heavy.

Inside diameter 1⅜ inches.

No. S—173.....each ....

Shower Curtain Pins

Unpointed style.

Made of brass wire .093 inches diameter.

No.....	1441	1443
Nickel Plated.....each	....	....
For Rod Diameter.....in.	½ to ¾	1
Length.....in.	2⅛	2⅞

No. B-298 Curtain Holdback Hooks and Chains

Chromard finish curtain holdback hook and chain with round head wood screws.

No. B-298.....each ....

Can be furnished to harmonize with Waldorf and Neo-Classic trims.

THERE'S A DEFINITE *Feel* OF QUALITY IN

PARA SHOWER CURTAINS

● There is something really different about Para curtains, not only in their distinctive beauty of color and design, but in that luxuriant feel that reflects inherent quality.

We feature Para because it is positive assurance that you—in turn—can assure your customers of satisfactory service.

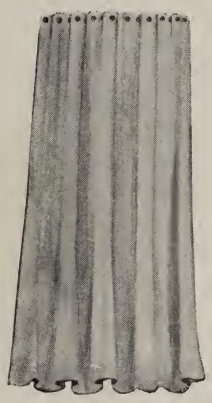
COATED SILK CURTAINS in soft filmy lightweight materials including oiled silks, Paratex and Softone—coated to make them waterproof and mildew-resistant.

CELANESE AND RAYON CURTAINS in luxuriant heavy taffetas and moires that are washable and mildew-resistant. Treated with Para's Famous Crystaline Process for water-repellency.

PARA DISPLAY BOX

Features a complete assortment of shower curtains in solid colors and prints. Visit our showrooms with your customers and select from the large selection shown in our Para Display Box.

No. 10900 White Duck Shower Curtains



No.	Each	Fixture Size Ft.	Curtain, Inches Width	Length
		For Shower Stalls		
1	.....	2½	36	72
2	.....	3	42	72
3	.....	3½	48	..
4	.....	4	54	..
		For Recess Baths		
5	.....	4½	60	72
6	.....	5	66	72
7	.....	5½	72	72
8	.....	6	78	72
		For Corner Baths		
9	.....	4½	84	72
10	.....	5	90	72
11	.....	5½	96	72
12	.....	6	102	72
13	.....	42x27-inch	72	72
14	.....	57x28-inch	99	72

When Ordering

please refer to the sizes and numbers shown in this book. It will help us in filling your order accurately.

No. B-689 Hose Connections

Hose connection for bath faucet.

No. B-**689**, Nickel-Plated.....each .....

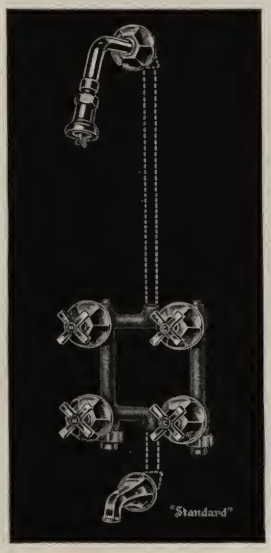
No. B-**689**, Chromard Finish.....each .....

No. B-696 Hose Connections

Hose connection with expansion joint. For over rim and top nozzle supply bath fittings.

No. B-**696**, Nickel-Plated.....each .....

No. B-**696**, Chromard Finish....each .....



No. B-70 Re-Nu Built-In Four-Valve Cluster Bath Filler and Shower Combinations

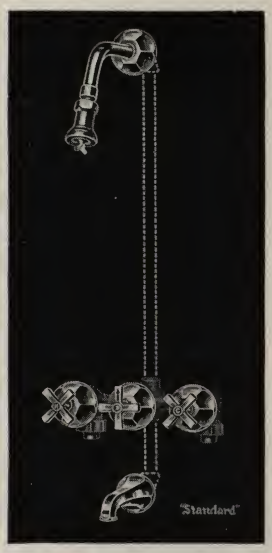
Standard Trim

All-metal built in four-valve cluster bath filler and shower combination with Re-Nu compression valves with cross handles, escutcheons, union couplings with ½-inch I.P. thread, bent shower arm with wall escutcheon, Boyd adjustable shower head with ball joint, and over rim spout.

Exposed metal Chromard finish.

Approximate Shipping Weight.....pounds 6

Drain not included.



No. B-73 Re-Nu Built-In Bath Filler and Shower Transfer Valve Combinations

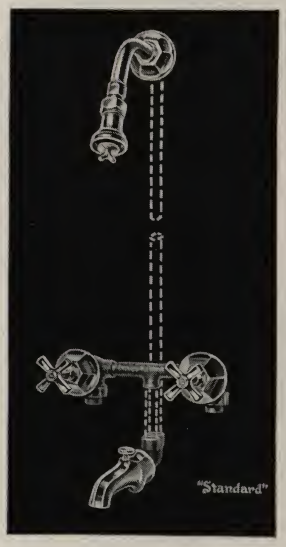
Standard Trim

All-metal built-in bath filler and shower transfer valve combination with Re-Nu compression valves with cross handles, escutcheons, union couplings with ½-inch I.P. thread, bent shower arm with wall escutcheon, Boyd adjustable shower head with ball joint, and over rim spout.

Exposed metal Chromard finish.

Approximate Shipping Weight.....pounds 13

Drain not included.



No. B-75 Re-Nu Built-In Diverter Spout Bath Filler and Shower Combinations

Standard Trim

All-metal built-in bath filler and shower combination with Re-Nu compression valves with cross handles, escutcheons, union couplings with ½-inch I.P. thread, bent shower arm with escutcheon, Boyd adjustable shower head with ball joint, and over rim spout with integral diverter valve to shower.

Exposed metal Chromard finish.

No. B-75.....each .....

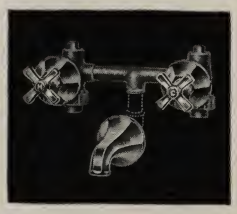
Drain not included.

No. B-668 Bath Faucet and Shower Combinations

Bath faucet and shower combination with quick compression bath faucet with lever handles, transfer valve for shower with high riser pipe, 4-inch cast brass shower head with adjustable ball joint, D type curtain rod, duck curtain and curtain hooks.

Chromard finish.

Approximate Shipping Weight.....pounds 20



No. B-348 Re-Nu Built-In Tub Fillers

Standard Trim

Bath supply fitting with over rim spout, ½-inch Re-Nu by-pass valves with cross handles, escutcheons, and ground joint union couplings.

Exposed metal Chromard finish.

No. B-348.....each ....

No. B-358 Re-Nu Concealed Bath Supply and Drain Fittings

Standard Trim

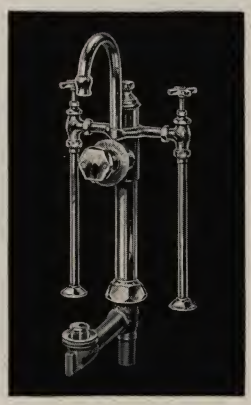
All-metal over rim bath supply and 2-inch pop-up drain fitting with ½-inch Re-Nu built-in compression valves with union couplings, cross handles, and escutcheons.

Union couplings, ½-inch I.P. size.

Drain connection, 1½-inch O. D. tube or 1½-inch outside I.P. thread.

Exposed metal Chromard finish.

No. B-358.....each ....



No. B-368 Re-Nu Exposed Bath Supply and Drain Fittings

Standard Trim

All-metal over rim bath supply and 2-inch pop-up drain fitting with ½-inch Re-Nu compression valves and supply pipes to floor, cross handles and drain knob.

Drain connection, 1½-inch O.D. tube or 1½-inch outside I.P. thread.

Exposed metal Chromard finish.

No. B-368.....each ....

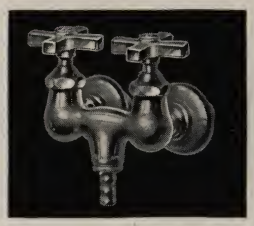
For use on double shell baths only.

No. B-601 Compression Double Bath Faucets

Compression double bath faucet with metal lever handles and gooseneck spout above rim of bath.

No. B-601, Nickel-Plated .....each ....

No. B-601, Chromard Finish.....each ....



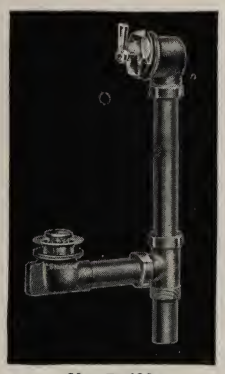
No. B-615 Compression Double Bath Faucets

Compression double bath faucet with 4-arm metal handles and hose connection.

No. B-615, N.P.....each ....

No. B-615, Chromard Finish.....each ....

Concealed Pop-Up Bath Drains and Overflows



No. B-438

Standard Trim

All-metal rough brass concealed pop-up drain and overflow with lever handle operating through overflow.

For built-in baths.

Exposed metal Chromard finish.

Size.....in.	1½	2
No. B-438, O.D. Tube or Outside I.P.Thrd..ea.	....	....
No. B-438-F, Inside I.P. Thread.....ea.	....	*

*Not made.

No. 440 Exposed Bath Drains and Overflows

Polished brass 1½-inch connected drain and overflow with bead chain, rubber stopper, tail piece, and floor escutcheon.

For leg tubs.

No. 440, Nickel-Plated..each .....
No. 440, Chromard Finish .....each .....

Concealed Connected Drains and Overflows

No. B-448

Standard Trim

Rough brass concealed connected drain and overflow with bead chain and rubber stopper.

For built-in baths.

Exposed metal Chromard finish.

Size.....in.	1½	2
No. B-448, O.D. Tube or Outside I.P. Thrd..ea.	....	....
No. B-448-F, Inside I.P. Thread.....ea.	....	*

*Not Made.

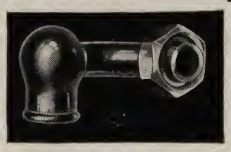
No. B-684

Bath Faucet Couplings

Size, I.P.T. in.	⅜	½
No. B-684, Rough N.P..ea.	....	....
No. B-685, Fin. N. P..ea.	....	....
No. B-685, Chromard Fin....ea.	....	....

No. B-685

No. 688 Ball Offset Couplings



Size.....inches	⅜	½
No. 688, Chromard Finish.....per pair	.....	.....

Bath Supply Pipes

No. 512, Straight

No. 530, Double Offset

No. 512 with No. 520 Offset

No. 515 with No. 520 Ball Offset

No.....	512	†512	†512	*†515	*†515	530	530	530
C.P. per pr.....	...	...	...	...	...	...	...	...
Size.....in.	½	½	½	½	½	9/16 O.D.	9/16 O.D.	9/16 O.D.
Lgth.....in.	20½	22½	22½	22½	22½	21½	21½	21½
Gage.....	I.P.S.	I.P.S.	14	I.P.S.	14	18	16	14

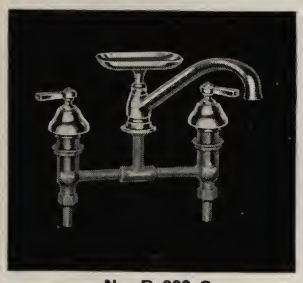
*Stop can be furnished less stuffing box.
†With No. 520 ball offset.

MATERIAL NOT LISTED

We can furnish practically everything used in mill, factory, or shop.
Please send us all of your inquiries.

Deck Type Re-Nu Compression Combination Sink Faucets

No. B-882-ST



No. B-882-S

Adaptable to counter top installation. Will accommodate to 1⅝-inch maximum thickness.

No. B-882-ST

Auto-unit combination sink faucet with swinging spout, removable soap dish, hose and thumb-controlled spray, back flow preventor, Re-Nu compression valves with lever handles and escutcheons, and ¼-inch I.P.S. male tailpieces.

No. B-882-ST.....each ....
No. B-883-RST, As Above with Third Water Valve at Right.....each ....
No. B-883-LST, As Above with Third Water Valve at Left.....each ....

No. B-882-S

Combination sink faucet with swinging spout, removable soap dish, Re-Nu compression valves with lever handles and escutcheons, and ¼-inch I.P.S. male tailpiece.

No. B-882-S.....each ....
No. B-883-RS, As Above with Third Water Valve at Right.....each ....
No. B-883-LS, As Above with Third Water Valve at Left.....each ....

If desired without soap dish, omit S from number.

Re-Nu Compression Double Sink Faucets

All-metal Re-Nu compression double sink faucet with swinging spout, lever handles, removable soap dish, and union couplings threaded ½-inch outside I.P. size with adjustable flanges.

Exposed metal Chromard finish.

No. B-902-S, as Described.....each .....

No. B-902, less Soap Dish.....each .....

Compression Double Sink Faucets
For Counter Top Installations

All-metal compression double sink faucet with swinging spout, renewable seats, lever handles, removable soap dish, and elbow union couplings threaded ½-inch outside I.P.T.

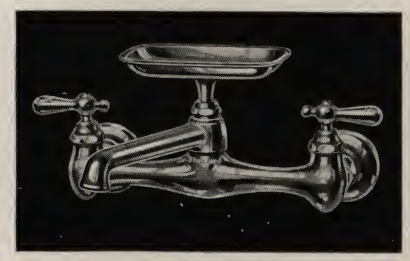
Exposed metal Chromard finish.

No. B-904-S, as Described.....each .....

No. B-904, less Soap Dish.....each .....

Can be furnished with hose end on spout or with 8-inch long spout at added cost.

Compression Double Sink Faucets



All-metal compression double sink faucet with swinging spout, lever handles, removable soap dish, and union couplings threaded ½-inch outside I.P.T. with adjustable flanges.

Exposed metal Chromard finish.

No. B-906-S, as Described.....each .....

No. B-906, less Soap Dish.....each .....

Can be furnished with hose end on spout or with 8-inch long spout at added cost.

Compression Double Laundry Tray Faucets

No. B-929

Compression double laundry tray faucet with swinging spout and hose end, top inlet supply with union couplings for ½-inch iron pipe, polished metal lever handles and caps, and bracket for attaching to stone or composition laundry trays.

Rough Chromard finish.

No. B-929, as Described .....each ....

No. B-929-4, for Flat Rim Enameled Trays.....each ....

No. B-929-5, for Roll Rim Enameled Trays.....each ....

Compression Double Laundry Tray Faucets

No. B-929-S

Compression double laundry tray faucet with metal soap dish, swinging spout with hose end, top inlet supply with union couplings for ½-inch iron pipe, polished metal lever handles and caps, and bracket for attaching to stone or composition laundry trays.

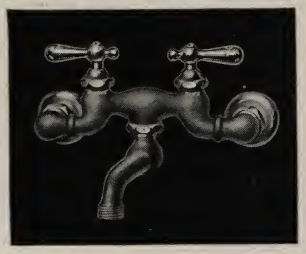
Rough Chromard finish.

No. B-929-S, as Described.....each ....

No. B-929-S-4, for Flat Rim Enameled Trays....each ....

No. B-929-S-5, for Roll Rim Enameled Trays... each ...

No. B-930 Re-Nu Compression Double Laundry Tray Faucets

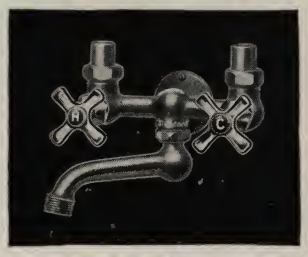


Re-Nu compression double laundry tray faucet with swinging spout with hose end, caps, union couplings, and adjustable flanges. Couplings with outside ½-inch I.P. threads.

Body and spout are rough chromard finish.

No. B-930.....each ....

Compression Double Laundry Tray Faucets



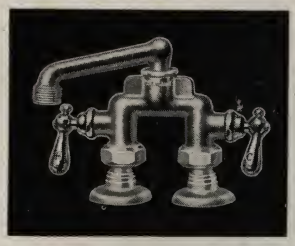
No. B-932

Rough Chromard finish compression double laundry tray faucet with hose end, swinging spout, and union couplings with ½-inch iron pipe thread.

No. B-932, for Ceiling Supplies.....each ....

No. B-931, for Floor Supplies.....each ....

No. B-934 Compression Double Laundry Tray Faucets



Compression double laundry tray faucet with swinging spout with hose end, polished metal lever handles and body caps, union couplings, and adjustable flanges. Couplings with inside ½-inch I.P. threads.

Body and spout are rough Chromard finish.

No. B-934.....each ....

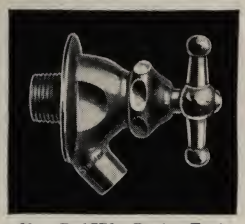
Tray Faucet Brackets

No. 1 Attaches No. B-932 to Flat Rim Enameled Tray.....each ...

No. 2 Attaches No. B-932 to Composition Tray...each ...

No. 3 Attaches No. B-932 to Roll Rim Enameled .....each ...

Compression Laundry Tray Faucets



No. B-1570, Plain End

No. B-1571, Hose End

Tee handle, solid flange, ½-inch outside I.P. thread.

No.....	B-1570	B-1571
Nickel-Plated.....each	.....	.....
Chromard Finish.....each	.....	.....

Compression Laundry Tray Faucets

Stub Pattern

Solid Flange—Red Brass—Countersunk Discs

Plate E-3405
Male—Plain

Plate E-3406
Male—Hose

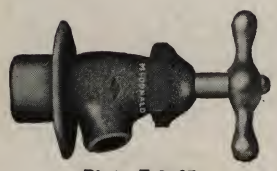


Plate E-3407
Female—Plain

Plate E-3408
Female—Hose

Made of red brass. High grade composition discs counter sunk in the end of the stem. Special cap packing to prevent leakage around the stem. Acme machine quick-opening threads on stem.

Made in one size only, for ½-inch pipe. Hose ends have regular hose thread.

Plate No.....	E-3405	E-3406	E-3407	E-3408
Rough, Nickel-Plated..each	$1.00	$1.20	$1.10	$1.30
Finished Brass....each	1.20	1.40	1.30	1.50
Finished and Nickel-Plated Brass.. .....each	1.30	1.50	1.40	1.60

Re-Nu Compression Wash Sink Faucets

Rough Chromard double wash sink faucet with spray, polished metal lever handles and body caps, and ½-inch union couplings.

No. B-952, for Exp. Piping .....ea. ....

No. B-953, with Adj. Flanges; for Concealed Piping..ea. ....

No. B-921 Re-Nu Compression Service Sink Faucets

For wall installation over service sink without back.

Chromard finish Re-Nu compression service sink faucet with stuffing boxes, 4-arm metal handles, long spout with bucket hook, top brace, and solid flanges threaded inside, ¾-inch iron pipe size.

No. B-921.....each .....

No. B-923 Re-Nu Compression Service Sink Faucets

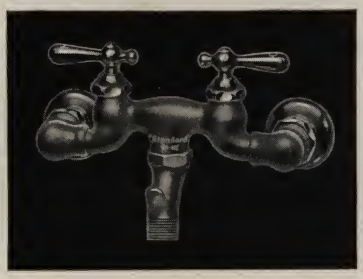
Built-in faucet for use over service sink without back.

Re-Nu compression service sink faucet with 4-arm metal handles and escutcheons, spout with bucket hook and stream regulator, top brace and inlet connections threaded ½-inch inside I.P.T.

Exposed metal Chromard finish.

No. B-923.....each ...

No. B-927 Re-Nu Compression Service Sink Faucets



Re-Nu compression service sink faucet with metal lever handles, short spout with bucket hook and stream regulator, and union couplings threaded ½ inch outside I.P.T. with adjustable flanges.

For use on service sink with back.

Body is rough, trim is polished Chromard finish.

No. B-927.....each ....

Re-Nu Compression Wash Sink Faucets

No. B-945

Rough Chromard double wash sink faucet with stream regulator, polished gooseneck spray, 4-arm handles and body caps, and ½-inch union couplings, with polished adjustable flanges.

No. B-945, As Described.....each .....

No. B-955, with Lever Handles.....each .....

Continuous Drains

Drains permit maximum center-to-center measurement of 28 inches.

Furnished in Chromard finish and nickel-plated.

No. B-980

Continuous drain with center outlet and odd number of slip joint inlets for 1¼ or 1½-inch tail-pieces. Specify size inlets desired. Size tubing run, 1¼ and 1½ inches.

No. B-981

Continuous drain with center outlet and even number of slip joint inlets for 1¼ or 1½-inch tail-pieces. Specify size inlets desired. Size tubing run, 1¼ and 1½ inches.

No. B-982

Continuous drain with end outlet and slip joint inlets for 1¼ or 1½-inch tubing tail-pieces. Specify size inlets desired. Size tubing run, 1¼ and 1½ inches.

Prices upon application.

Sink Drains with Standing Overflows

Open Top

Beehive Top

Fits vitreous or wood sinks used in chemical laboratories, engraving, printing, and blue print work.

Supplied with mercury arresting ring if desired.

Stoppers may be furnished instead of overflow top.

Standard height of overflow to waterline 5 inches, other sizes made to order.

Also furnished with nickel plated or chromium finish.

Size, I.P.Thread ..... inches	1½	2
No. **330**, Finished Brass, Open Top ..... each	**$6.00**	**$8.00**
No. **332**, Finished Brass, Beehive Top .... each	**8.00**	**11.00**
No. **331**, Lead, Open Top ..... each	**9.00**	**12.00**
No. **333**, Lead, Beehive Top ..... each	**12.00**	**16.00**

Sink Drain Plugs

For sinks with 3½-inch outlet. Chromard finish.

No. B-989 with Stopper

Cast brass sink drain plug with removable crumb cup, stopper, and 1½-inch O.D. tubing tail-piece.

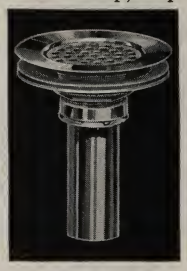
No. B-**989**..each ....

No. B-989

No. B-991 with Removable Grid

Cast brass sink drain plug with removable grid and 1½-inch O.D. tubing tail-piece.

No. B-**991**..each ....



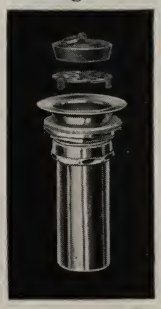
No. B-991

Drain Plugs

For 2½-Inch Outlets

No. B-995

Wrought brass drain plug with rubber stopper and 1½-inch O.D. tubing tailpiece.



No. B-**995**, Nickel-Plated.....each .....

No. B-**995**, Chromard Finish..each .....

No. B-996

Wrought brass drain plug with removable metal grid and 1½-inch O.D. tubing tail-piece.

No. B-**996**, Nickel-Plated.....each .....

No. B-**996**, Chromard Finish..each .....

Wrought Brass Sink Strainers

Knife edged flange, 3-inch diameter, fits flush in outlet of sink; cut thread full 1½-inch I.P.S.; large and small leather washers; cast brass locknut. Tail piece, 4 inches long.

Shank, 1⅝ inches long under flange.

No. 6300

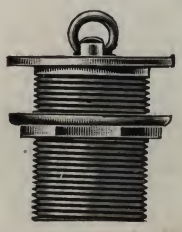
No. 8042

	Tail Piece Inches	No. 6300 Open Strainer N.P. Each	No. 6300 Open Strainer C.P. Each	No. 8042 with Rubber Stopper N.P. Each	No. 8042 with Rubber Stopper C.P. Each
No. 6300	1¼	....	....	....	....
	1½	....	....	....	....

Brass Wash Tray Plugs

No. 9065 for Lead Pipe

No. 9066 for Iron Pipe



Tail piece, 1¼ inch.

No. **9065**, N.P.....ea. .... No. **9066**, N.P.... ea. ....

No. **9065**, C.P.....ea. .... No. **9066**, C.P.... ea. ....

No. 6801 Basket Strainers

Chromium-plated removable basket strainer for use in sink plugs.

Converts any old style, removable strainer into a modern crumb-cup strainer.

No. **6801**.....each ....

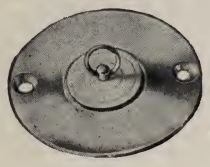
No. 4415 Brass Open Sink Strainers

For old style sinks having horn outlet.

Outside Diameter.....inches	4½	4⅝
No. **4415**, Nickel Plated.....each	....	....
No. **4415**, Chromium Plated.....each	....	....

No. 4416 Brass Plug Sink Strainers

With Rubber Plug



Outside Diameter..inches	4⅝
Size of Plug .....inches	1½

No. **4416** Chromium-Plated.each ....
No. **4416** Nickel-Plated ....each ....

Sink Collars

No. 450 for Lead Pipe

Size.....inches	1¼	1½	2
Plain.....per doz.	.....	.....	.....
Galvanized.per doz.	.....	.....	.....

No. 452 for Iron Pipe

Size.....inches	1¼	1½	2
Plain.....per doz.	.....	.....	.....
Galvanized.per doz.	.....	.....	.....

Sink Bolts

The diameter is ¼ inch.

Length Inches	Price per Hundred	Length Inches	Price per Hundred	Length Inches	Price per Hundred
1	$2.10	2	$2.50	3	$2.90
1¼	2.20	2¼	2.60	3½	3.10
1½	2.30	2½	2.70	4	3.30
1¾	2.40	2¾	2.80	...	....

Price of brass sink bolts upon application.

No. B-700 Re-Nu Compression Combination Lavatory Supply and Drain Fittings

Waldorf Trim

All-metal combination lavatory supply and drain fitting with Re-Nu compression valves, cross handles, high spout, and pop-up drain with knob, and 1¼-inch O.D. tubing tailpiece.

Exposed metal Chromard finish.

No. B-**700**.....each ....

No. B-700 Re-Nu Compression Combination Lavatory Supply and Drain Fittings

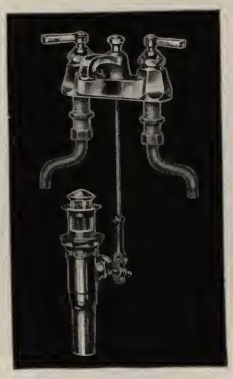
Colonial Trim

All-metal combination lavatory supply and drain fitting with Re-Nu compression valves, cross handles, high spout, and pop-up drain with knob, and 1¼-inch O.D. tubing tailpiece.

Exposed metal Chromard finish.

No. B-**700**.....each ....

No. B-702 Re-Nu Compression Combination Lavatory Supply and Drain Fittings

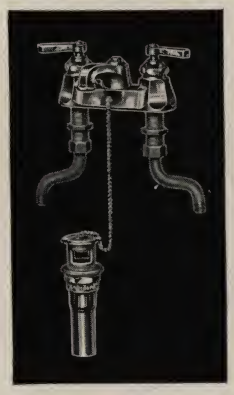


All-metal compression lavatory supply and drain fitting with Re-Nu compression valves, lever handles, high spout, and pop-up drain with knob and 1¼-inch O.D. tubing tailpiece.

Exposed metal Chromard finish.

No. B-**702**.....each ....

No. B-703 Compression Combination Lavatory Supply and Drain Fittings



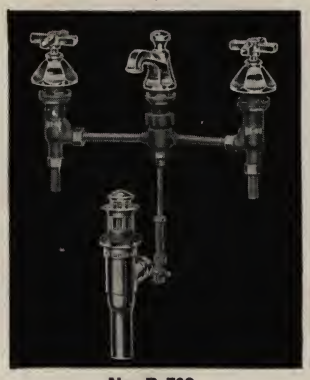
All-metal compression lavatory supply and drain fitting with Re-Nu compression valves, lever handles, high spout, drain plug with bead chain, rubber stopper, and 1¼-inch O.D. tubing tail-piece.

Exposed metal Chromard finish.

No. B-**703**.....each ....

Re-Nu Compression Combination Lavatory Supply and Drain Fittings

Standard Trim



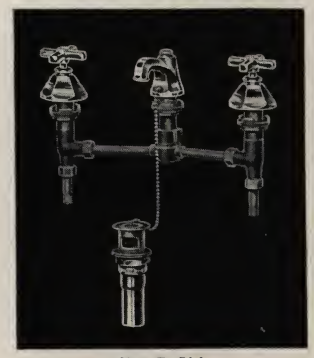
No. B-708

All-metal combination lavatory supply and drain fitting with Re-Nu compression valves, cross handles, high spout, and pop-up drain with knob and 1¼-inch O.D. tubing tailpiece.

Exposed metal Chromard finish.

No. B-**708**, with Short Spout.....each ....
No. B-**709**, with Long Spout.....each ....

Re-Nu Compression Combination Lavatory Supply and Drain Fittings



No. B-714

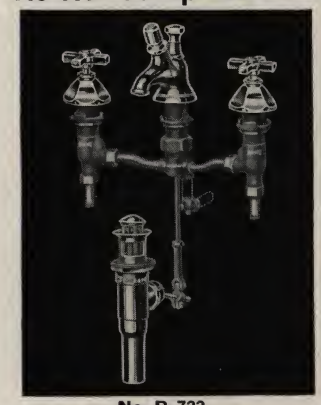
Standard Trim

All-metal combination lavatory supply and drain fitting with Re-Nu compression valves, cross handles, high spout, and drain plug with bead chain, rubber stopper, and 1¼-inch outside diameter tubing tailpiece.

Exposed metal Chromard finish.

No. B-**714**, with Short Spout.....each ....
No. B-**715**, with Long Spout.....each ....

Re-Nu Compression Combination Lavatory Supply and Drain Fittings



No. B-723

Standard Trim

Chromard all metal combination lavatory supply, ice water supply, and drain fitting with Re-Nu compression valves, self-closing ice water valve, drain and regulating ell, and pop-up drain and 1¼-inch tail-piece.

No. B-**723**, with Short Spout.....each ...
No. B-**724**, with Long Spout.....each ....

Lavatory must be ordered with special center punching to take this fitting.

Re-Nu Compression Combination Lavatory Supply and Drain Fittings

No. B-776

Re-Nu compression double lavatory faucet and pop-up lavatory drain with metal lever handles, metal knob, and special connection with couplings and ¼-inch outside I.P. thread tailpieces.

Exposed metal Chromard finish.
No. B-**776**.....each ....

No. B-777

Same as No. B-776 except Mastercraft design and with Princess pop-up drain for large outlet lavatories.
No. B-**777**.....each ....

No. B-780 Re-Nu Compression Double Lavatory Faucets

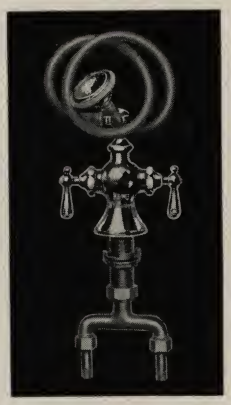
All-metal Re-Nu compression double lavatory faucet with lever handles and special connection with couplings and ¼-inch outside I.P. thread tailpieces.

Exposed metal Chromard finish.

No. B-**780**.....each .....

Regularly furnished with short spout. Can be furnished with long spout when specified.

No. B-781 Re-Nu Compression Double Shampoo Faucets



All-metal Re-Nu compression double shampoo faucet with lever handles, rubber hose and spray, and special connection with couplings and ¼-inch outside I.P. thread tail-pieces.

Exposed metal Chromard finish.

No. B-**781**.....each ....

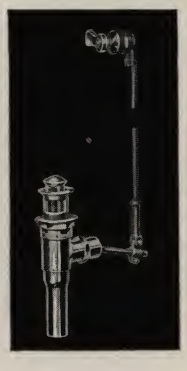
No. B-787 Combination Lavatory Supply and Shampoo Fittings

All-metal combination lavatory supply and shampoo fitting with compression faucets with lever handles, Re-Nu compression shampoo valves with cross handles, hose and spray.

Exposed metal Chromard finish.

No. B-**787**.each ....

Pop-Up Lavatory Drains



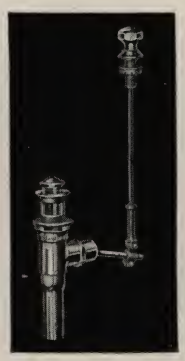
All-metal pop-up lavatory drain with lever handle through the back and with 1¼-inch O.D. tubing tailpiece.

Exposed metal Chromard finish.

No. B-**763**, for Enameled Lavatory.....each ....

No. B-**766**, for Vitreous Lavatory.....each ....

No. B-769 Pop-Up Lavatory Drains



All-metal pop-up lavatory drain with knob through the slab and with 1¼-inch O.D. tubing tailpiece.

For enameled or vitreous lavatories.

Exposed metal Chromard finish.

No. B-**769**.....each ....

No. B-1010 Compression Lavatory Faucets

Compression lavatory faucet with raised spout, metal cross handle, coupling nut, and ¼-inch outside I.P.S. tail-piece.

No. B-**1010**, Nickel-Plated .....each .....

No. B-**1010**, Chromard Finish.....each .....

No. B-1011 Compression Lavatory Faucets

Compression lavatory faucet with raised spout, metal lever handle, coupling nut, and ¼-inch outside I.P.T. tail-piece.

No. B-**1011**, N.P.....each .....

No. B-**1011**, Chromard Finish.....each .....

No. B-1020 Re-Nu Compression Lavatory Faucets

Chromard finish, Re-Nu compression lavatory faucet with raised spout, metal cross handle, coupling nut, and ¼-inch outside I.P.S. tail-piece.

No. B-**1020**.....each .....

No. B-1021 Re-Nu Quick Compression Lavatory Faucets

Chromard finish. Re-Nu quick compression lavatory faucet with raised spout, metal lever handle, coupling nut, and ¼-inch outside I.P.S. tail-piece.

No. B-**1021**.....each ....

No. B-1050 Re-Nu Self-Closing Lavatory Faucets

Chromard finish. Re-Nu ball bearing self-closing lavatory faucet with raised spout, 4-arm metal handle, coupling nut, and ¼-inch outside I.P.S. tail-piece.

No. B-**1050**.....each ....

Re-Nu Self-Closing Lavatory Faucets

Re-Nu self-closing lavatory faucet with raised spout, metal push knob, coupling nut, and ¼-inch outside I.P.S. tailpiece. Exposed metal Chromard finish.

No. B-**1056**, Slow Closing ...each ....

No. B-**1057**, Fast Closing....each ....

No. B-1100 Compression Faucets

Compression faucet with plain end, metal tee handle, and hexagon shoulder.

Made in ½ and ¾-inch sizes.

Available finishes: Rough brass, rough N. P.; finished brass; polished N. P. and polished chromard.

No. B-1101 Compression Faucets

Compression faucet with hose end, metal tee handle, and hexagon shoulder.

Made in ½ and ¾-inch sizes.

Available finishes: Rough brass, rough N. P.; finished brass; polished N. P. and polished chromard.

Compression Faucets

Compression faucet with metal lever handle and solid flange.

	N.P.		Chromard	
Size I.P.T. in.	½	¾	½	¾
*No. B-**1144** .....ea.	....	....	....	....
†No. B-**1147** .....ea.	....	....	....	....

*Plain end. †Hose end.

Compression Faucets

Compression faucet with metal tee handle and solid flange.

	N.P.		Chromard	
Size I.P.T. in.	½	¾	½	¾
*No. B-**1140** .....ea.	....	....	....	....
†No. B-**1141** .....ea.	....	....	....	....

*Plain end. †Hose end.

Compression Faucets

Compression faucet with metal cross handle and solid flange.

	N.P.		Chromard	
Size I.P.T.in.	½	¾	½	¾
*No. B-**1148** .....ea.	....	....	....	....
†No. B-**1149** .....ea.	....	....	....	.

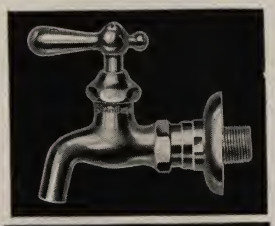
*Plain end. †Hose end.

Compression Plain Faucets

Compression faucet with metal tee handle and adjustable flange.

	N.P.		Chromard	
Size, I.P.T.in.	½	¾	½	¾
*No. B-**1150**ea.	...	...	...	...
†No. B-**1151**ea.	...	...	...	...

*Plain end. †Hose end.



No. B-1154 Compression Faucets

Compression faucet with plain end, metal lever handle, and adjustable threaded flange.

Size.....inches	½	¾
No. B-**1154**, N.P. .....each	....	....
No. B-**1154**, Chromard Finish.....each	....	....

No. B-1157 Compression Faucets

Compression faucet with hose end, metal lever handle, and adjustable threaded flange.

Size.....inches	½	¾
No. B-**1157**, N.P. .....each	....	....
No. B-**1157**, Chromard..each	....	....

Compression Plain Faucets

Compression faucet with metal cross handle and adjustable flange.

	N.P.		Chromard	
Size.....in.	½	¾	½	¾
*No. B-**1158**..ea.	...	...	...	...
†No. B-**1159**..ea.	...	...	...	...

*Plain end. †Hose end.

No. B-1302 Re-Nu Compression Faucets

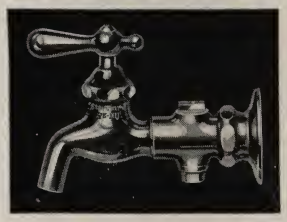
Compression faucet with plain end, metal lever handle, and hexagon shoulder.

Size, I.P.T.....inches	½
No. B-**1302**, N.P.....each	....
No. B-**1302**, Chromard Finish.....each	....

No. B-1305 Re-Nu Compression Faucets

Re-Nu compression faucet with hose end, metal lever handle, and hexagon shoulder.

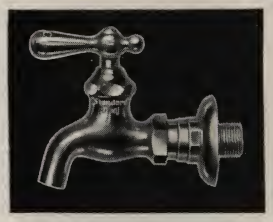
Size, I.P.T.....inches ½
No. B-**1305**, N.P.....each ....
No. B-**1305**, Chromard Finish.....each ....



Re-Nu Quick Compression Faucets

With metal lever handle, stop in shank, and solid flange. Made in ½-inch size.

	N.P.	Chromard
No. B-**1334**, Plain End.....each	....	....
No. B-**1337**, Hose End.....each	....	....



Re-Nu Quick Compression Faucets

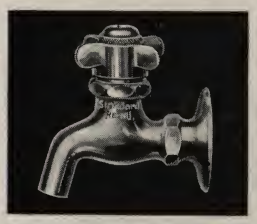
With metal lever handle, and adjustable threaded flange. Made in ½-inch size.

	N.P.	Chromard
No. B-**1354**, Plain End.....each	....	....
No. B-**1357**, Hose End.....each	....	....

No. B-1402 Re-Nu Self-Closing Faucets

Re-Nu ball bearing self-closing faucet with metal 4-arm handle and hexagon shoulder.

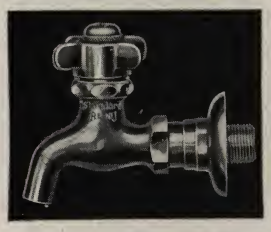
Size, ½ inch.
No. B-**1402**, N.P.....each ....
No. B-**1402**, Chromard Finish.....each ....



No. B-1442 Re-Nu Self-Closing Faucets

Re-Nu ball-bearing self-closing faucet with plain end, metal 4-arm handle, and solid flange.

Size I.P.T.....inches ½
No. B-**1442**, N.P.....each ....
No. B-**1442**, Chromard Fin. .....each ....



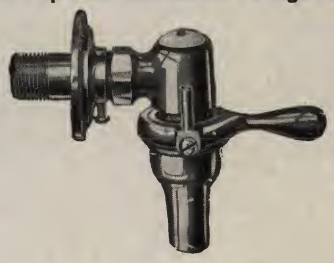
No. B-1452 Re-Nu Self-Closing Faucets

Re-Nu ball bearing self-closing faucet with plain end, metal 4-arm handle, and adjustable threaded flange. Size, ½ inch.

No. B-**1452**, N.P....each ....
No. B-**1452**, Chromard Finish.....each ....

Savill Swan-Neck Faucets

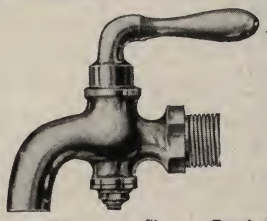
Nos. A22 and A23 Junior
China Index Top and Set Screw Flange for Iron Pipe



No	A22	A23
Size, Male I.P.T.....inches	½	⅝x¾
Center of Nozzle to End of Shank.....inches	3¼	4¼
Nickel Plated.....each	$2.50	$3.00
Chromium Plated.....each	3.50	4.00

No. 8360 Ground Key Plain Faucets

For Iron Pipe—Plain Lever Handle

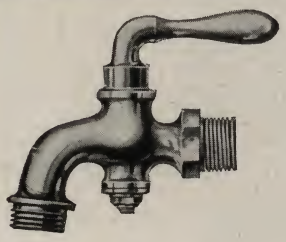


Size In.	Rough Each	Fin. Each	N.P. Each	Size In.	Rough Each	Fin. Each	N.P. Each
¼	$1.65	$2.05	$2.45	1	$4.40	$5.40	$6.40
⅜	1.70	2.10	2.50	1¼	7.45	8.95	10.45
½	1.75	2.15	2.55	1½	12.45	14.95	17.45
⅝	2.45	2.95	3.45	2	21.50	25.00	28.50
¾	3.00	3.95	4.50	...	.....	.....	.....

Can be furnished chromium plated at additional cost.

No. 8362 Ground Key Hose Faucets

For Iron Pipe—Plain Lever Handle



Size..inches	½	⅝	¾	1	1¼	1½	2
Rough..each	$2.00	2.70	3.25	5.00	8.35	13.70	23.35
Finished.ea.	$2.40	3.20	4.00	6.00	9.85	16.20	26.85
N.P....each	$2.80	3.70	4.75	7.00	11.35	18.70	30.35

Can be furnished chromium plated at additional cost.

No. B-938 Re-Nu Compression Double Pantry Faucets

Re-Nu compression double pantry faucet with rigid gooseneck spout, metal cross handles, lock nut, and special connection with union coupling and two ¼-inch outside I.P. thread tail-pieces.

Exposed metal Chromard finish.

No. B-**938**.....each .....

No. B-939 Re-Nu Compression Double Pantry Faucets

Re-Nu compression double pantry faucet with swinging spout, metal lever handles, lock nut, and special connection with union coupling and two ¼-inch outside I.P.T. tail-pieces.

Exposed metal Chromard finish.

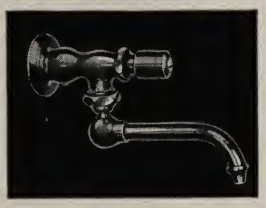
No. B-**939**.....each ....

No. B-1095 Re-Nu Compression Single Pantry Faucets

Re-Nu compression single pantry faucet with rigid gooseneck spout, metal lever handle, lock nut, coupling nut, and ¼-inch outside I.P.T. tailpiece.

Exposed metal Chromard finish.

No. B-**1095**.....each ....



No. B-864 Self-Closing Ice Water Faucets

Chromard finish self-closing ice water faucet with indexed push button, swinging spout, volume regulator, and solid flange with inside ⅜-inch I.P. thread.

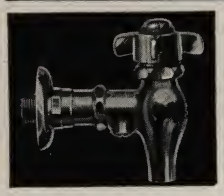
No. B-**864**.....each .....

No. B-865 Self-Closing Ice Water Faucets

For drinking fountain with back.

Chromard finish self-closing ice water faucet, angle pattern, with push button, regulating screw and solid flange with ⅜-inch inside I.P.S. thread, and lock nut on shank.

No. B-**865**.....each .....

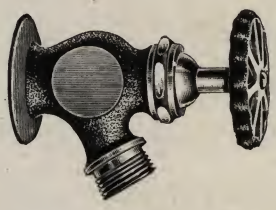


No. B-868 Re-Nu Self-Closing Ice Water Faucets

Chromard Re-Nu self-closing ice water faucet with 4-arm metal handle, volume regulator, and adjustable threaded flange. Inlet, ½-inch outside I.P. thread.

No. B-**868**.....each .....

No. 3561 Compression Lawn Faucets



Inlet, sizes ½ or ¾-inch female I.P.S.; outlet, ¾-inch male hose thread.

	Iron Wheel	Brass Wheel	T Handle	Loose Key
No. **3561**, Rough N.P.....each	$2.50	$2.90	$2.50	$2.90
No. **3561**, Finished.....each	2.50	2.90	2.50	2.90
No. **3561**, Nickel Plated.....each	2.85	3.25	2.85	3.25

Can be furnished chromium plated at added cost.

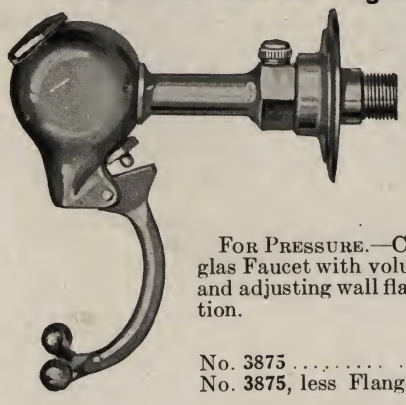
No. 509 Lawn Faucet Keys

Fits either lawn faucets or plain faucets.

Nickel-plated finish.

Price, No. **509**.....each ....

No. 3875 Mueller Filglas Faucets



For Pressure.—Chromium-plated Filglas Faucet with volume regulating screw and adjusting wall flange. ⅜-inch connection.

No. **3875** .... each .....
No. **3875**, less Flange and Nipple
... . each .....

No. 3890 Mueller Double Vertical Filglas Faucets

Chromium-plated filglas faucet for city pressure. For installation on vertical supply.

Complete with lock-nut, ¼-inch I.P.S. tailpiece and volume adjusting screws.

Base to center of bodies, 8 13/16 inches. Center of base to center of outlets, 3 13/16 inches.

No. **3890**.....each .....

Rough Compression Sediment Faucets

Nickel-plated—Red Metal

Iron Wheel Handle
Plate E3594

Threaded at one end for either ½ or ¾-inch iron pipe, while the outlet end is threaded to fit a ¾-inch hose coupling. Generally used for draining the water out of range boilers, but it can also be used as a lawn faucet.

Size.....inches	½	¾
Price, Rough Nickel-plated.....each	...	....

No. B-1600, Straight

Compression Stops

For Iron Pipe
Tee Handle
With Plain Cap

No. B-1603, Angle

	No. B-1600		No. B-1603	
Size.....inches	⅜	½	⅜	½
Rough Brass.....each	....	....	....	....
Rough Nickel-Plated.....each	....	....	....	....
Finished Brass.....each	....	....	....	....
Nickel-Plated.....each	....	....	....	....
Chromard Finish.....each	....	....	....	....

Compression Stops
For Iron Pipe—Wheel Handle With Plain Cap

No. B-1605, Straight

No. B-1608, Angle

	No. B-1605		No. B-1608	
Size.....inches	3/8	1/2	3/8	1/2
Nickel Plated.....each	....	....	....	....
Chromard Finish.....each	....	....	....	....

Compression Stops
For Iron Pipe—Wheel Handle With Stuffing Box

No. B-1606, Straight

No. B-1609, Angle

	No. B-1606		No. B-1609	
Size.....inches	3/8	1/2	3/8	1/2
Nickel Plated.....each	....	....	....	....
Chromard Finish.....each	....	....	....	....

Compression Stops
For Iron Pipe—Metal Cross Handle—Plain Cap

No. B-1610, Straight

No. B-1610, Straight Pattern

Size, Inside, I.P.T...in.	3/8	1/2
No. B-1610, Nickel-Plated.....each	....	....
No. B-1610, Chromard Finish.....each	....	....

No. B-1613, Angle Pattern

Size, inside, I.P.T...in.	3/8	1/2
No. B-1613, Nickel-Plated.....each	....	....
No. B-1613, Chromard Finish.....each	....	....

No. B-1611, Straight

Compression Stops
For Iron Pipe Cross Handle Stuffing Box

No. B-1614, Angle

	No. B-1611		No. B-1614	
Size.....inches	3/8	1/2	3/8	1/2
Rough Brass.....each	....	....	....	....
Rough Nickel-Plated...each	....	....	....	....
Finished Brass.....each	....	....	....	....
Nickel-Plated.....each	....	....	....	....
Chromard Finish.....each	....	....	....	....

No. B-1620, Straight

Loose Key Compression Stops

Loose Key Compression Stops, straight and angle patterns.

No. B-1623, Angle

No. B-1620 Straight Pattern

Size, Inside I.P.T.....inches	3/8	1/2
No. B-1620, Finished Brass.....each	....	....
No. B-1620, Nickel-Plated.....each	....	....
No. B-1620, Chromard Finish.....each	....	....

No. B-1623 Angle Pattern

No. B-1623, Finished Brass.....each	....	....
No. B-1623, Nickel-Plated.....each	....	....
No. B-1623, Chromard Finish.....each	....	....

No. B-1641, Straight

Re-Nu Self-Closing Stops

Re-Nu ball bearing self-closing stop with metal 4-arm handle.

No. B-1647, Angle

No. B-1641 Straight Pattern

Size.....inches	3/8	1/2
No. B-1641, Nickel-Plated.....each	....	....
No. B-1641, Chromard Finish.....each	....	....

No. B-1647 Angle Pattern

Size.....inches	3/8	1/2
No. B-1647, Nickel-Plated.....each	....	....
No. B-1647, Chromard Finish.....each	....	....

Re-Nu Self-Closing Urinal Stops

No. B-1654

No. B-1654

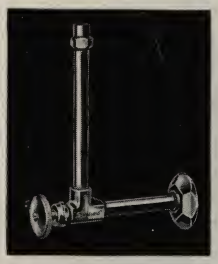
Re-Nu self-closing urinal stop with metal 4-arm handle, 1/2-inch I.P. thread inlet, and putty joint outlet.

No. B-1653

Same as No. B-1654 except with brass spud outlet.

	No. B-1654	No. B-1653
Finished Brass.each	....	....
Nickel-Plated..each	....	....
Chromard Finish .....each	....	....

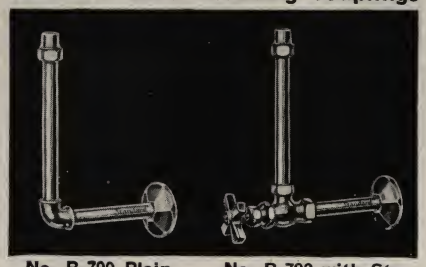
No. B-820 Lavatory Supply Pipes



Chromard lavatory supply pipe to wall with wheel handle Metal to Metal seating control stop, 3/8x1/4-inch reducing coupling and wall flange.

I.P.S.....inches	3/8
No. B-820.....per pair	....

Lavatory Supply Pipes
With Threaded Reducing Couplings



No. B-790 Plain No. B-792 with Stop

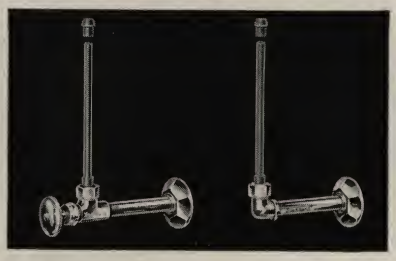
Supply Pipes to Wall

Size, I. P. ..... inches	3/8	1/2
No. B790, Plain, Nickel-Plated ..... per pair	.....	.....
No. B790, Plain, Chromard Finish ... per pair	.....	.....
No. B792, with Cross Handle Stop, N.P. per pr.	.....	.....
No. B792, with Cross Handle Stop, Chromard Finish ... per pr.	.....	.....

Supply Pipes to Floor

Size, I.P. ..... inches	3/8	1/2
No. B794, Plain, Nickel-Plated ..... per pair	.....	.....
No. B794, Plain, Chromard Finish ... per pair	.....	.....
No. B796, with Cross Handle Stop, N.P. per pr.	.....	.....
No. B796, with Cross Handle Stop, Chromard Finish ... per pr.	.....	.....

Lavatory Supply Pipes



Chromard finish lavatory supply pipes. Riser, 3/8-inch o.d. flexible tube with ground joint nib for lavatory faucet shank on one end, union connection on other end.

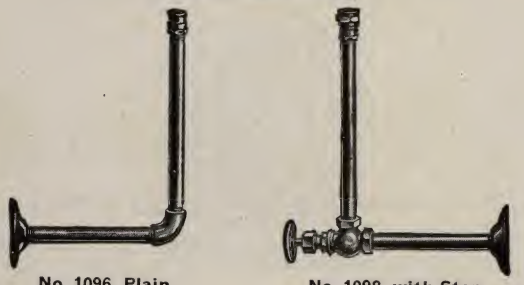
Supply Pipes to Wall

Size, I.P. ..... inches	3/8
No. B-814, with Wheel Handle Stop ..... each	.....
No. B-815, Plain with Union (No Stop) ..... each	.....

Supply Pipes to Floor

Size, I.P. ..... inches	3/8
No. B-816, with Wheel Handle Stop ..... each	.....
No. B-817, Plain with Union (No Stop) ..... each	.....

Lavatory Supply Pipes to Wall
With Couplings



No. 1096, Plain No. 1098, with Stop

Size pipe, 3/8-inch. Center to end, 6½ to 8½ inches.

	N.P.	C.P.
No. 1096, Plain ..... each	....	....
No. 1098, with Stop ..... each	....	....

Lavatory Supply Pipes to Wall

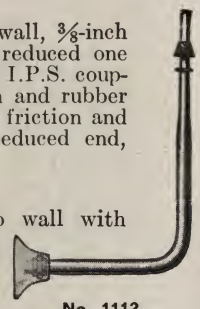
No. 1112

Lavatory supply pipe to wall, 3/8-inch O.D. annealed brass pipe, reduced one end to 7/16-inch O.D.; ½-inch I.P.S. coupling nut with brass friction and rubber washers for wall end, brass friction and rubber cone washers for reduced end, and 9/16-inch O.D. flange.

No. 1118

Lavatory supply pipe to wall with wheel handle angle stop, 3/8-inch I. P. S. reduced one end to 7/16-inch O.D. with brass friction and rubber cone washers, and 9/16-inch O.D. flange.

No. 1118



No. 1112

Furnished chromium-plated. Also nickel-plated.

Handy Lavatory Connections

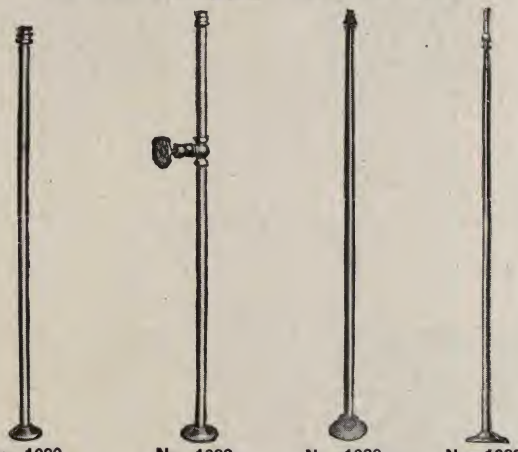
For slip joint end to fit coupling nut on shank of lavatory faucet. Tubing, 7/16-inch o.d.

No. 146

No. 151

Angle No.	Lgth. In.	I.P.S. In.	Per Pair	Straight No.	Lgth. In.	I.P.S. In.	Per Pair
146	5	3/8	....	151	5	3/8	....
	10	3/8	....		10	3/8	....
148	5	½	....	152	5	½	....
	10	½	....		10	½	....

Lavatory Supply Pipes to Floor



No. 1080 No. 1082 No. 1086 No. 1088

Length ..... inches	26½	28	29	30
No. 1080, 3/8" I.P.S. to ¼" Reducer ..... ea.	....	....	*	....
No. 1082 Same as No. 1080 with Stop ..... ea.	....	*	*	*
No. 1086, 9/16" O.D. to 7/16" Reduced End ..... ea.	*	*	....	....
No. 1088, 3/8" I.P.S. to 7/16" Reduced End ..... ea.	*	*	*	....

*Not made in these lengths. N.P. and C.P. finishes.

Lavatory Drains

Chromium-plated 22-gage brass with coupling nut and spun brass floor flange.

Length ..... inches	24	30
No. 2432, 1¼-Inch O.D. ..... each	....	*
No. 2434, 1½-Inch O.D. ..... each	....	....

*Not made in this size.

Chromard Lavatory Drain Plugs

No. B-753

No. B-754

No. B-755

No. B-758

No. B-759

Regularly furnished with 1¼-inch tail-piece. Can be furnished with 1½-inch tail-piece when specified.

No. B-**753**, with Beehive Strainer for Lavatory without Overflow....each ....
No. B-**754**, with Finger Lift Metal Stopper.....each ....
No. B-**755**, with Beehive Strainer.each ....
No. B-**758**, with Chain and Rubber Stopper.....each ....
No. B-**759**, with Cast Integral Grid .....each ....

Lavatory Patent Overflow Plugs

A P.O. plug with 1-inch rubber stopper, bead chain, and mack washer.

Finishes: polished and nickeled, plug top only polished chromium or all polished chromium.

Nos. 1138 and 1140 have wrought plugs; No. 1142 has cast plug.

Tail pieces, 1¼-inch outside diameter. Plugs threaded 1¼-inch outside diameter by 14 threads.

Be sure to specify gage and finish when ordering.

Wrapped in tissue, 12 in a box.

No. 1142-5 2-Piece Tail Piece

*No.	No. B&S Gage	Style Tail Piece	Length Plug under Flange Inches
1138–5	22	1-Piece	2¾
1138–5	17	2-Piece	2¾
1138–6	17 or 22	2-Piece	2¾
1138–8	17 or 22	2-Piece	2¾
1138–10	17 or 22	2-Piece	2¾
1138–12	17 or 22	2-Piece	2¾
1140–5	22	1-Piece	3¾
1142–5	17 or 22	1-Piece	2⅝
1142–6	17 or 22	2-Piece	2⅝
1142–8	17 or 22	2-Piece	2⅝
1142–10	17 or 22	2-Piece	2⅝
1142–12	17 or 22	2-Piece	2⅝

No. 1138-5 2-Piece Tail Piece

*The number after the dash is the length in inches of the tail piece under the tail piece flange.

Brass Extension Tubes

2360

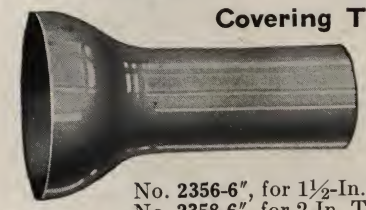
Less Nuts—To Solder

Length	inches	6	8
No. **2360**, 1¼″ O.D.	each	....	....
No. **2362**, 1½″ O.D.	each	....	....

With Nuts—For Slip Joint

Length	inches	6	....
No. **2364**, 1¼″ O.D.	each	....	....
No. **2366**, 1½″ O.D.	each	....	....

Covering Tubes



To cover connection between New York Regulation Trap and Wall.

		N.P.	C.P.
No. **2356-6″**, for 1½-In. Trap	each	....	....
No. **2358-6″**, for 2-In. Trap	each	....	....

No. B-757 Faucet Hole Covers

Faucet hole cover with wrought brass nut.

No. B-**757**, Nickel-Plated.....each ....
No. B-**757**, Chromard Finish..each ....

Chain Stays

Nickel-plated

No. 0

No	Each
0	....
1	....
3	....

No. 1

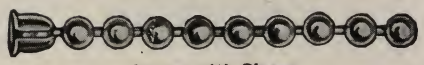
No. 3

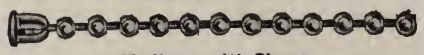
No. B-756 Chain Stays

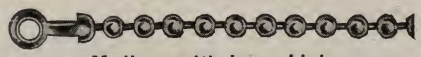
Chain stay to fit drain drilling in slab of enameled or vitreous lavatories.

No. B-**756**, Nickel-Plated.....each ....
No. B-**756**, Chromard Finish...each ....

Bead Chain


Large, with Sleeve


Medium, with Sleeve


Medium, with Jump Link

Chromard finish.

Description	Large No.	Large Each	Medium No.	Medium Each
Chain, **12** Inches Long	....	.....	**1095**	.....
Chain, **16** Inches Long	**1108**	.....	**1109**	.....
Chain, **24** Inches Long	....	.....	**1111**	.....
Chain, **36** Inches Long	....	.....	**1110**	.....
Jump Link Only	**273**	.....	**274**	.....
Sleeve Only	**276**	.....	**275**	.....

Plumbers' Bead Chain

Packed 250 and 500 feet on a reel or 36 feet in a box.

No.		**10**	**13**
Nickel Silver	per 100 feet	....	....
Chromium-Plated	per 100 feet	....	....
Diameter Bead	inches	3/16	¼

Jump Ring Bead Chain Couplings

Type B

Type A

		Nickel Silver	Chromium Plated
Type B Coupling	per 100	....	....
Type A Coupling	per 100	....	....

Plumbers' Brass Link Chain

On Reels

Packed on reels of 250 and 500 feet.

Chain No.....	00	0
Nickel-Plated .....per 100 ft.	.....	.....
Chromium-Plated .....per 100 ft.	.....	.....

In Boxes

Packed 36 feet in each box.

Chain No.....	00	0
Nickel-Plated .....per box	.....	.....
Chromium-Plated .....per box	.....	.....

Brass Beehive Urinal Strainers

Chromard finish brass beehive urinal strainer.
Made in 2 and 3-inch outlet sizes.

No. B-2006, for Lead Pipe Connection.....each .....
No. B-2008, for Iron Pipe Connection.....each .....
No. B-2010, for Soil Pipe Connection.....each .....

No. B-2024 Universal Brass Beehive Urinal Strainers

Chromard finish urinal strainer with beehive top, locknut, and washer.

For 2-inch soldered lead joint or for caulking 2-inch I.P.S. nipple.

No. B-2024.....each ....

Brass Urinal Strainers

Chromard finish brass urinal strainer with removable metal grid.

Made in 2 and 3-inch outlet sizes.

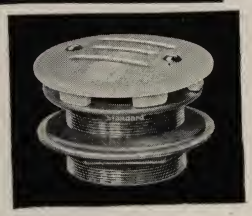
No. B-2012, for Lead Pipe Connection.
No. B-2014, for Iron Pipe Connection.
No. B-2016, for Soil Pipe Connection.

No. B-2026 Universal Brass Urinal Strainers

Chromard finish universal brass urinal strainer with removable metal grid, lock nut, and washer.

For 2-in. soldered lead joint or for caulking 2-in. I.P.S. nipple.

No. B-2026.....each ....



No. B-2022 Universal Brass Urinal Strainers

Universal brass urinal strainer with china top, lock nut, and washer.

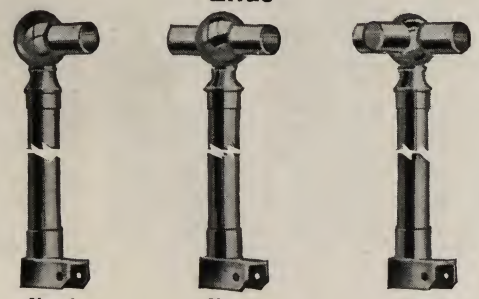
For 2-inch soldered lead joint or for caulking 2-inch I.P.S.

No. B-2022.....each ....

Urinal and Closet Stall Trimmings

Top Standards

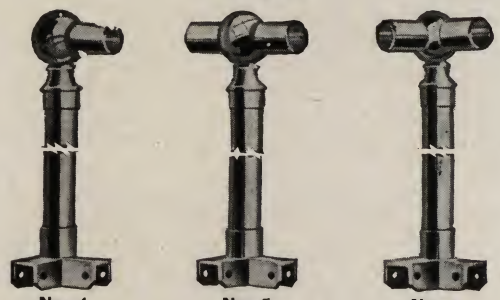
Ends



No. 1 No. 2 No. 3

No.....	1	2	3
Finished or N.P. with Bolts and Nuts..ea.	$5.00	5.00	5.20

Corners



No. 4 No. 5 No. 6

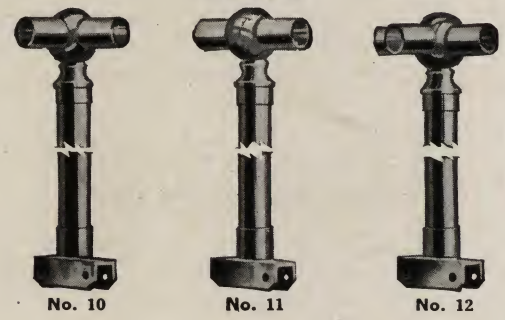
No.....	4	5	6
Finished or N.P. with Bolts and Nuts..ea.	$5.20	5.20	5.40

Partitions

No. 7 No. 8 No. 9

No.....	7	8	9
Finished or N.P. with Bolts and Nuts..ea.	$6.00	6.00	6.20

Centers



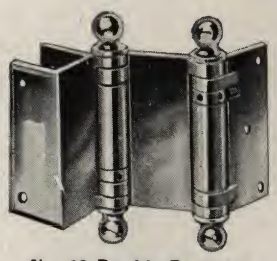
No. 10 No. 11 No. 12

No.....	10	11	12
Finished or N.P. with Bolts and Nuts..ea.	$5.00	5.00	5.20

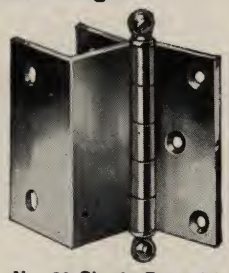
Add 20% for chromium plate.

Sockets for above are made for 7/8, 1, 1 1/8 and 1 1/4-inch marble. Always state thickness of marble, both stile and partition. Height of above, 12 inches from top of marble to center of top rail. Top rail branches take 1 1/8-inch O. D. railing.

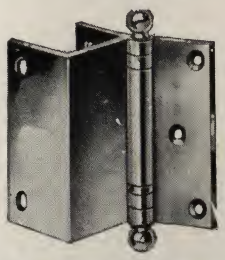
Urinal and Closet Stall Hinges



No. 19 Double Box with Steel Spring



No. 20 Single Box with Steel Spring



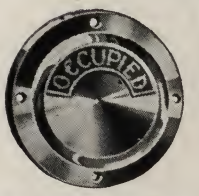
No. 21 Single Box without Spring

Made in finished brass or nickel-plated.

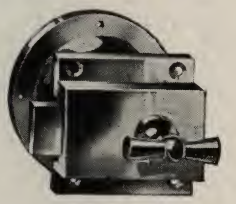
Price, Double Box, with Spring.....per pair **$19.60**
Price, Single Box, with Spring.....per pair **15.40**
Price, Single Box without Spring..... per pair **12.80**

Urinal and Closet Stall Door Bolts

Indicating Rim Door Bolts



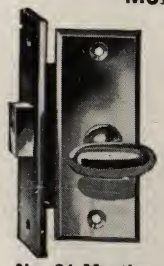
No. 23 Outside View



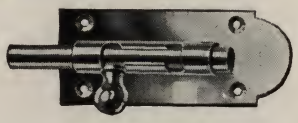
No. 23 Inside View

Price, Finished or Nickel-plated.....each **$3.75**

Mortise and Sliding Door Bolts



No. 24 Mortise



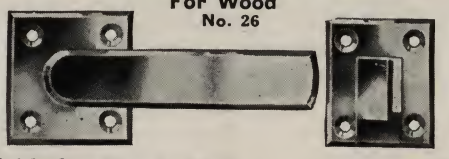
No. 25 Sliding

Price, Mortise Bolts, Fin. or N. P. .....each **$2.75**
Price, Sliding Bolts, Fin. or N. P. .....each **.50**

Urinal and Closet Stall Throw Latches

For Wood

No. 26



Price, Finished or Nickel-plated.....each **$1.75**

Bolts for Marble or Slate

No. 1, Single Head, Loose Nut

No. 2, Single Head, Solid Nut

No. 3, Double Head

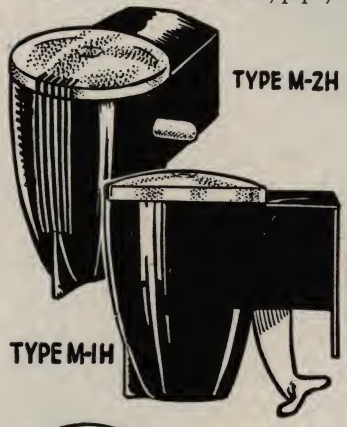
¼-inch brass bolts, finished or nickel-plated.

Number	1	2	3
Each	....	....	....

Pax Soap Dispensers

Lock Top—Adjustable Feed Control

Can be mounted on wall, pipe, or group wash fountains.



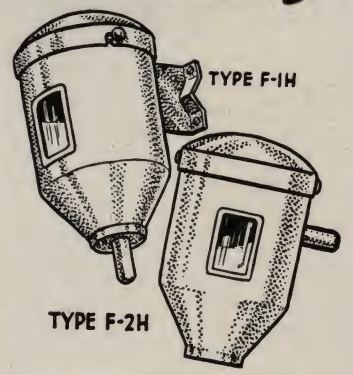
Type M

Made of ebony molded plastic.

No. M-1H has valve at bottom.

No. M-2H has valve at side.

No. M-1H...each ....
No. M-2H...each ....



Type F

Made of 18 gage steel.

No. F-1H chrome plated or white enameled, with valve at bottom.

No. F-2H white enameled with valve at side.

No. F-1H, Chrome Plated..each ....
No. F-1H, White Enameled.each ....
No. F-2H...each ....

Pax Skin Cleansers

Package

DeLuxe Can

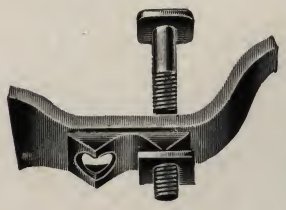
Containing anti-dermatitis emollient. Pax Heavy Duty recommended for industrial plant workers, both men and women. Pax Light Duty for office workers. Used for hands, face, shampoo and shower, exceptionally bland.

Size Package.....pounds	1	2	5
Heavy duty.....per package	**$.70**	**$1.30**	**$2.80**
Light Duty.....per package	**.80**	**1.40**	**3.10**

DeLuxe Cans

Shaker-top, lithographed, metal cans of Pax Heavy Duty or Light Duty.

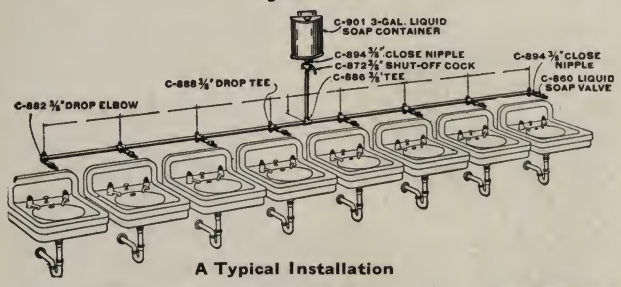
Each..... **$.30**
Case of 24 Cans..... **6.50**



No. 1 Basin Clamps

Price, Rough....per doz. **$2.00**

Watrous Gravity Liquid Soap Dispensing Systems



A Typical Installation

No. C-860 Horizontal Valve

No. C-862 Vertical Valve

This system operates wholly by the gravity principle— a simple valve delivers a predetermined supply of soap without drip or waste. An ideal system for factories, clubs, hotels, depots, hospitals, office buildings, etc. Any number of wash stands are served from one soap container.

Can be quickly and easily installed in old or new buildings with exposed piping or with all piping concealed.

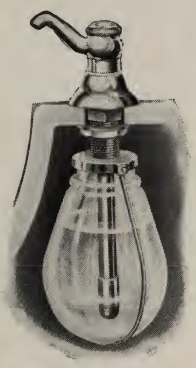
Size iron pipe thread, 3/8 inch.

No.	Description	Each	No.	Description	Each
C-860	Horizontal Valve	....	C-888	Drop Tee	....
			C-894	Close Nipple	....
C-862	Vertical Valve	....	*C-920	One-Gallon Tank	....
C-872	Shut-Off Cock	....	*C-901	Three-Gallon Tank	....
C-882	Drop Elbow	....			
C-886	Tee	....	*C-902	Five-Gal. Tank	....

*Regularly furnished of black iron with aluminum or white enamel finish. Furnished of monel metal at added cost.

Catalog listing other styles of valves and tanks will be sent upon request.

No. M-801 Watrous Liquid Soap Dispensers



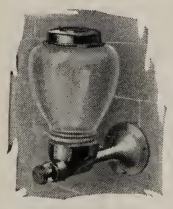
This plunger type dispenser fits lavatory tops up to 1¼ inch thick; also available up to 4½ inches. Delivers a measured quantity of soap, and is drip and leak-proof. To refill, unscrew push-button cap.

Finished in chromium plate, non-corrosive and positive in action.

Also available with all-metal container at extra cost.

No. M-801.....each ....

No. M-807 Watrous Liquid Soap Dispensers



Horizontal type for attachment to wall, push-button action. Delivers a measured quantity of soap, and is drip and leakproof. Refilled through cap.

Also available with all-metal container at extra cost.

No. M-807, C. P.....each ....

No. M-815 Watrous Liquid Soap Dispensers

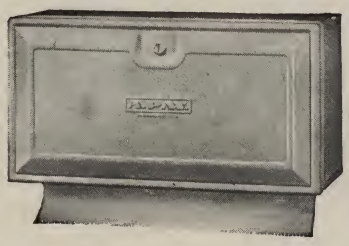
This soap dispenser fastens to wall or back of lavatory. Measured quantity of soap delivered with each operation of plunger.

The container has a swivel bracket so it can be inverted for refilling.

Chromium plated finish.

No. M-815.....each ....

A. P. W. Single Fold Paper Towel Cabinets



Made from heavy sheet steel and very durable.

Fitted with lock and key.

Slot on side of cabinet tells when to refill.

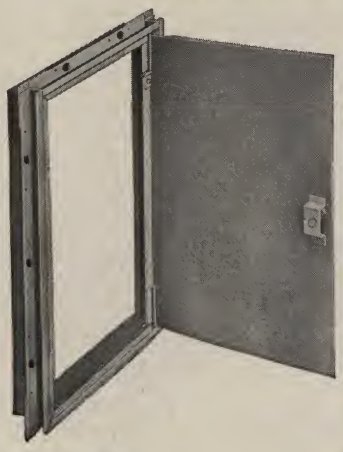
Accommodates single fold towels Nos. 817, 819, 830, and any other standard single fold towels.

Dimensions: 7½ inches high, 14¾ inches wide, 6 inches deep.

Capacity, 150 single fold towels.

No. **642**, Green Enamel.....each .....
No. **643**, White Enamel.....each .....

Lawco Access Panels



Used to permit immediate access to pipes, valves, air shafts, and similar equipment located in or behind walls. Panel door closes firmly on the inside sill or flange.

Made of steel. Fireproof.

When used in plaster walls, unit is supplied with the fastening flange of the panel set ½ inch back from the face.

When used with walls faced with marble, tile, or similar material requiring a setting bed of mortar, unit is supplied with the fastening and key flange set 1½ inches back from the face.

For Plaster Walls No.	For Hard Surface Walls No.	Each	Size Inches	Wall Opening Inches	Ship. Weight Pounds
5	55	....	7½x11½	8x12	6
7	75	....	12½x16½	13x17	10
11	115	....	14½x18½	15x19	14
21	215	....	18½x24½	19x25	25
23	235	....	18½x30½	19x31	30

Miami Towel Supply and Utility Cabinets

Nos. 510-A and 510-B

Designed for the luxurious bathroom.

Copper-backed mirror. Set in a chromium-plated frame.

Heavy, air-cushioned door is swung on brass, chromium-plated piano hinges.

Cabinet and door back are finished in white Miami crystal snow.

Five glass shelves are furnished with each cabinet.

The mirrored door of this unit serves as a full-length bathroom mirror.

No. 510-A

No. **510-A**.....each .....
Size Mirror.....inches 20x60
Wall Opening....inches 17¾x57¾x8
Size Overall.....inches 20¼x60¼x8⅝

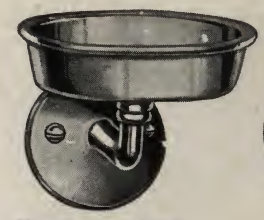
No. 510-B

No. **510-B**.....each .....
Size Mirror.....inches 20x60
Wall Opening....inches 17¾x57¾x6
Size Overall.....inches 20¼x60¼x6⅝

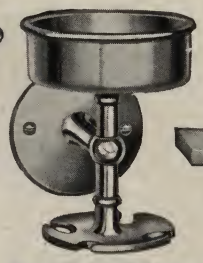
Parker Bathroom Accessories

All metal chromium plated accessories individually packed, complete with screws.

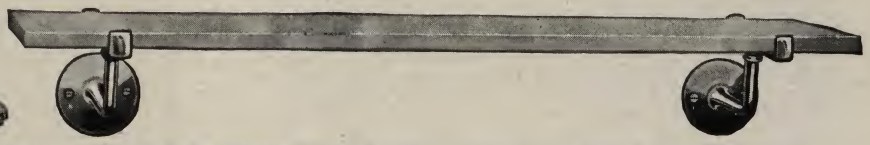
Wall-Hung Accessories with Flanges Having Exposed Screws



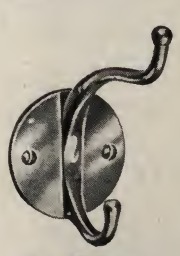
No. 1 Soap Dish
Each..... .....



No. 2 Tumbler and Toothbrush Holder.
Each..... .....

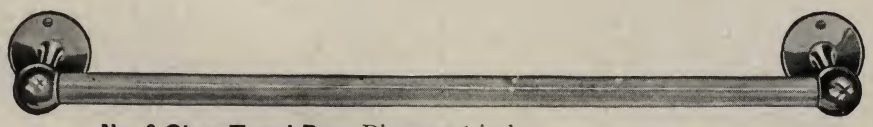


No. 7 Glass Shelf. Width 5 inches, thickness ½ inch, length, 21 inches.
Each..... .....



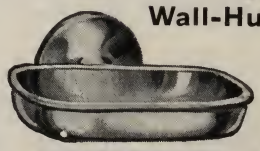
No. 10 Robe Hook.
Each.. .....

No. 3 Tumbler Holder.
Each.. .....

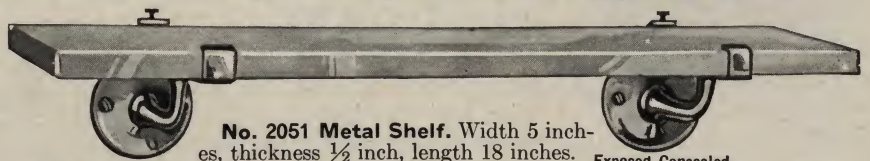


No. 6 Glass Towel Bar. Diameter 1 inch.
Length 24 Inches.....each .....
Length 44 Inches.....each .....

Wall-Hung Accessories with Flanges Having Concealed or Exposed Screws



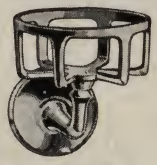
No. 581 Soap Dish
Each..... .....



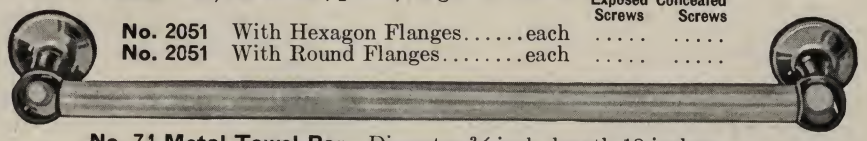
No. 2051 Metal Shelf. Width 5 inches, thickness ½ inch, length 18 inches.

		Exposed Screws	Concealed Screws
No. 2051	With Hexagon Flanges.....each	.....	.....
No. 2051	With Round Flanges.....each	.....	.....

No. 972 Tumbler and Toothbrush Holder.each .....



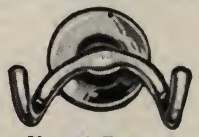
No. 476 Tumbler Holder..each .....



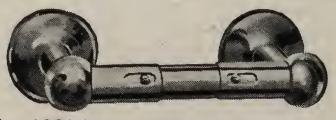
No. 74 Metal Towel Bar. Diameter ¾ inch, length 18 inches.

		Exposed Screws	Concealed Screws
No. 74	With Hexagon Flanges.....each	.....	.....
No. 74	With Round Flanges.....each	.....	.....

No. 59 Robe Hook..each .....



No. 46 Robe Hook..each .....

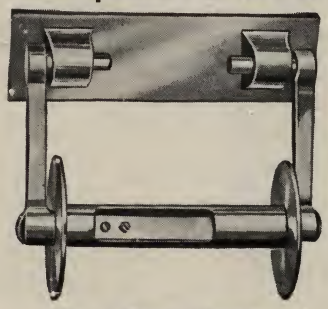


No. 1026 Paper Holder.each .....

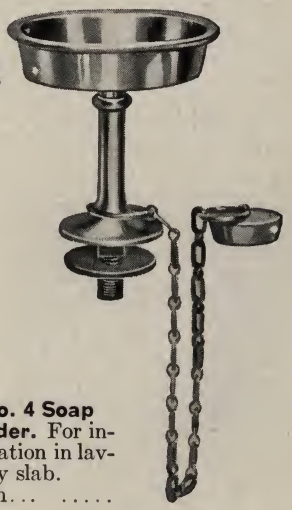
	No. 59. Exposed Screws	No. 59. Concealed Screws	No. 46 Exposed Screws	No. 46 Concealed Screws
With Hexagon Flanges..each	.....	.....	.....	.....
With Round Flanges....each	.....	.....	.....	.....

No. 5 Soap Holder. For roll rim bathtubs.
Each..... .....

Special Accessories



No. 9 Paper Holder
Each..... .....

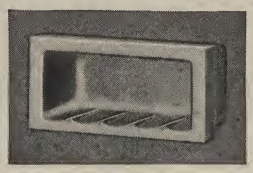


No. 4 Soap Holder. For installation in lavatory slab.
Each... .....

Hall-Mack Standard Cement-In Vitreous China Bathroom Accessories

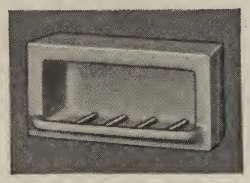
Regularly furnished in white. Furnished also in black or to order in color harmonizing with any tile or plumbing color.

No. 2136 Recessed Soap Holders



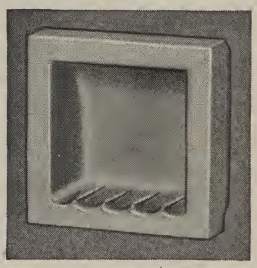
Size, 6x3 inches, flush.
No. **2136**.....each ....

No. 2137 Recessed Soap Holders



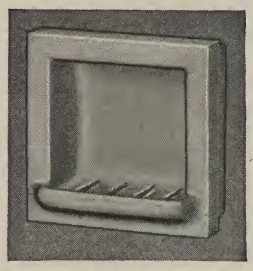
Size, 6x3 inches, lip.
No. **2137** .....each ....

No. 2166 Recessed Soap Holders



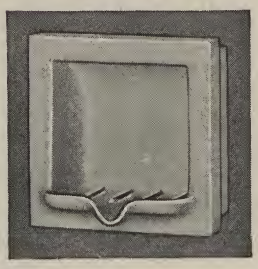
Size, 6x6 inches, flush.
No. **2166**.....each ....

No. 2167 Recessed Soap Holders



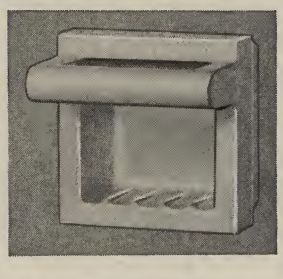
Size, 6x6 inches, lip.
No. **2167**.....each ....

No. 2167½ Recessed Soap Holders



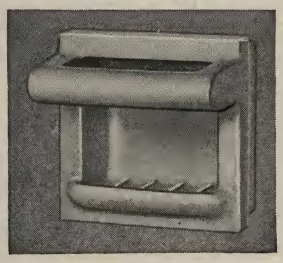
Size, 6x6 inches, drain.
No. **2167½**.....each ....

No. 2666, Recessed Soap and Grab Combinations



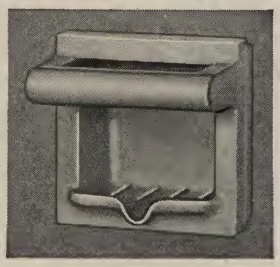
Size, 6x6 inches, flush.
No. **2666**.....each ....

No. 2667 Recessed Soap and Grab Combinations



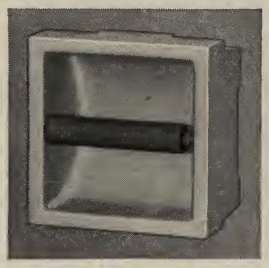
Size, 6x6 inches, lip.
No. **2667**. ....each ....

No. 2667½ Recessed Soap and Grab Combinations



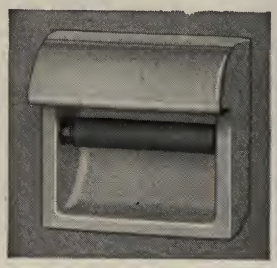
Size, 6x6 inches, drain.
No. **2667½**.....each ....

No. 2766 Recessed Roll Paper Holders



Size, 6x6 inches, flush.
No. **2766**.....each ....

No. 2769 Recessed Roll Paper Holders



Size, 6x6 inches, hood.
No. **2769**.....each ....

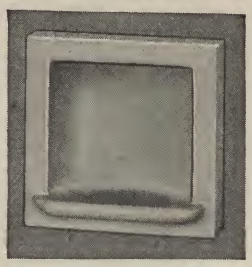
Towel Bars

Bars are ⅞ inch square. Standard lengths, 18, 24, 30, and 36 inches. Bars may be had in white, black or colored pyralin covered wood; or in crystal, open, or black glass. Specify kind and length of bar desired.

No. **2900**, Lug Back Posts.....each ....
No. **2933**, 3x3-Inch Clincher Back Posts .....each ....

No. **2944**, 4¼x4¼-Inch Clincher Back Posts ....each ....

No. 2466 Recessed Tumbler Holders



Size, 6x6 inches, flush.
No. **2466**.....each ....

No. 2820 Double Hooks

Lug back.
No. **2820**.....each ....

No. 2800 Strop Hooks

Lug back.
No. **2800**.....each ....

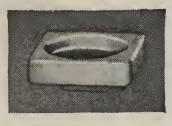
No. 2200 Soap Holders

Lug back.
No. **2200**.....each ....

No. 2300 Tumbler and Toothbrush Holders

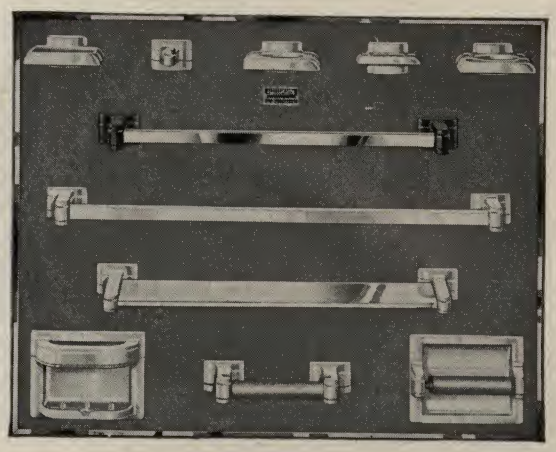
Lug back.
No. **2300**.....each ....

No. 2400 Tumbler Holders



Lug back.
No. **2400**.....each ....

Hall-Mack China Vogue Screw-On Bathroom Accessories



China Vogue accessories are smartly styled. They are not heavy and clumsy in appearance. The design is carried throughout every piece in the line so that any combination of fixtures selected will make a perfectly matched harmonizing set.

All fixtures are regularly furnished in white and black.

These accessories can be furnished on order to match any special color or shade.

Surface attached fixtures are easily installed by means of a wedge-shaped metal plate which is screwed to the wall. A slot in the back of the fixture fits down over this plate, concealing the screw-heads and giving a built-in appearance.

The recessed paper holder and soap and grab are installed by screws through the back of the fixture. They have a flange, 6½x5 inches. Wall opening of 5¾x4¼x1 inches must have backing to take wood screws or toggle bolts.

Towel Bars

	White, Black or Ivory Each				Colored to Match Each			
Length.....in.	18	24	30	36	18	24	30	36
No. **990** Square, ¾-In., Pyralin Covered...each	..	..	..	..	..	..	..	..
No. **991** Square, ¾-In., Chromium Plated..each	..	..	..	..	..	..	..	..

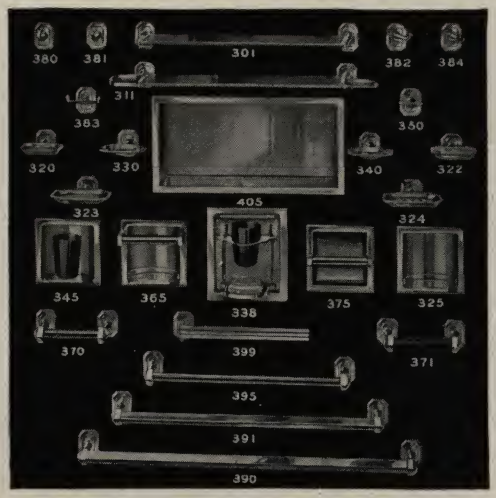
Shelves

	White, Black or Ivory Each			Colored to Match Each		
Length .....in.	18	24	30	18	24	30
No. **901** 5-Inch Crystal .....each	..	..	..	..	..	..

Miscellaneous

No.	Description	White or Black Each	Colored to Match Each
920	Soap Holder.....	....	....
930	Tumbler and Toothbrush Holder.....	....	....
940	Tumbler Holder.....	....	....
950	Toothbrush Holder.....	....	....
965	Recessed Soap and Grab.....	....	....
971	Toilet Paper Holder.....	....	....
976	Recessed Paper Holder	....	....
981	Utility Hook.....	....	....

Hall-Mack Aristocrome Forged Brass Bathroom Accessories



Square Towel Bars—⅞ Inch

Length.....inches	18	24	30	36
No. **390**, Chromium Plated.ea.	.....	.....	.....	.....
No. **391**, Crystal Glass...each	.....	.....	.....	.....

Round Towel Bars—¾ Inch

Length.....inches	18	24	30
No. **395**, Chromium Plated.....each	.....	.....	.....
No. **396**, Crystal Glass.....each	.....	.....	.....

Glass Shelves, 5 Inches Wide

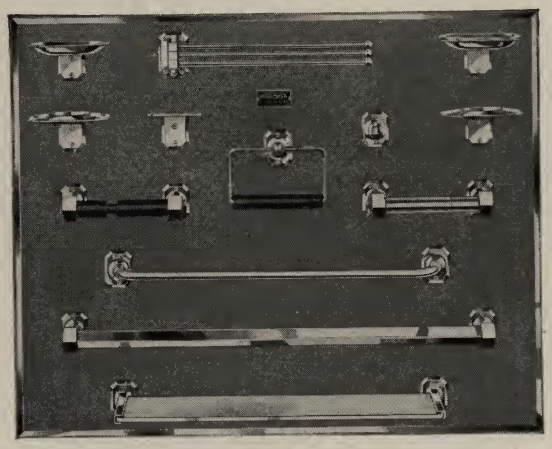
Length.....inches	18	24	30
No. **301**, Crystal.....each	.....	.....	.....
No. **311**, Shelf Comb, Crystal...each	.....	.....	.....

Miscellaneous

No.	Description	Each
320	Non-Draining Soap Holder.....	.....
321	Soap Holder with Drain Holes.....	.....
322	Soap Holder with Unbreakable Crystal Soap Tray.....	.....
323	Large Soap Holder.....	.....
324	Large Soap Holder with Drain Holes.....	.....
325	Recess Type Soap Holder with Unbreakable Crystal Soap Tray.....	.....
330	Tumbler and Toothbrush Holder (Holds 6 Brushes).....	.....
338	Concealed Lavatory Unit.....	.....
340	Tumbler Holder.....	.....
345	Recess Type Tumbler Holder.....	.....
350	Toothbrush Holder (Holds 5 Brushes).....	.....
365	Recess Type Unbreakable Crystal Soap Tray and Grab.....	.....
370	Projecting Toilet Paper Holder with Chromium Roller.....	.....
371	Projecting Toilet Paper Holder with Black Wood Roller.....	.....
375	Recess Type Toilet Paper Holder with Chromium Roller.....	.....
376	Recess Type Toilet Paper Holder with Black Wood Roller.....	.....
380	Razor Strop Hook.....	....
381	Robe or Bag Hook, 2½ Inches Long.....	.....
382	Towel Pin, 5 Inches Long.....	.....
383	Double Robe Hook.....	.....
384	Door Stop.....	.....
390	Square Grab Bar, 8 Inches Long, ⅞ Inch Sq....	.....
395	Round Grab Bar, 8 Inches Long, ¾ Inch.....	.....
399	3-Arm Swing Bar.....	.....
305	Recess Mirror Shelf.....	.....

If fixtures are to be installed with screws or toggle bolts add "S" to No. If fixtures are to be installed in tile by setting in cement add "L" to No. The wall opening for all recessed fixtures is 5¼x5¼x2 inches. "S" type fixtures screw into wood buck through back of recess. Special length towel bars and shelves made to order.

Hall-Mack Metropolitan-Chrome Plated Bathroom Accessories



Towel Bars

Length.....inches	18	24	30
No. 794, ¾-Inch, Square, Chrome...each	....	....	....
No. 798, ½-Inch, Round, One-Piece..each	....	....	....
No. 799, 12-Inch, 3-Arm Swing.....each	....	....	....

No. 701 Crystal Glass Shelves, 5 Inches Wide

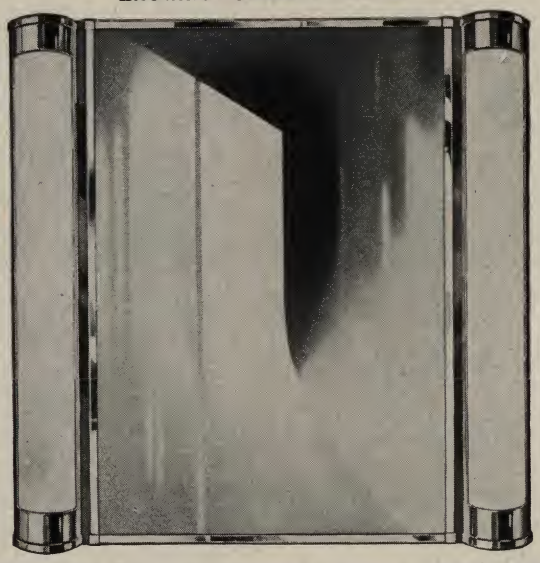
Length.....inches	18	24	30
No. 701.....each	....	....	....

Miscellaneous

No.	Description	Each	No.	Description	Each
720	Wall Soap Holder.	....	770	Paper Holder Chrome Roller..	....
722	Wall Soap Holder with Glass Tray	....	771	Paper Holder Wood Roller....	....
730	Tumbler and Tooth Brush Holder...	....	774	One Piece Paper Holder.....	....
740	Tumbler Holder...	....	781	Robe Hook.....	....
750	Tooth Brush Holder....				

No. FL-P1826C Hall-Mack Seamless Bathroom Cabinets

Lifetime Porcelain Interior



Has a half pillar of fluorescent light at each side behind curved opal lumarith. The 18x26-inch mirror has sprayed copper backing. Door and light fixtures trimmed with chromium-plated brass. Has light switch and convenience outlet. Two 20-watt fluorescent lamps not included.

Has three bulb edge glass shelves. Shelf strips permit ½-inch up-and-down adjustment on shelves. Brass chrome channel frame on all four sides eliminates mirror breakage.

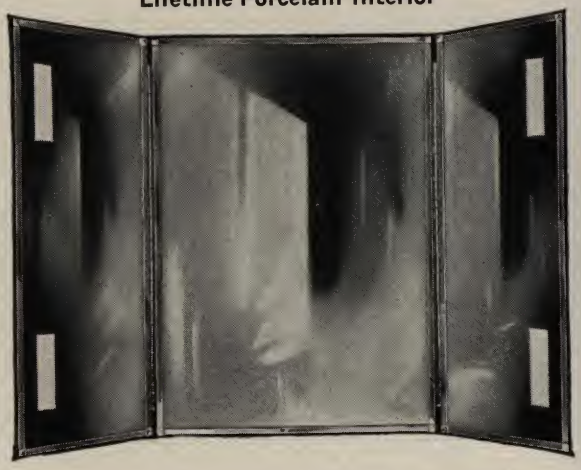
Approved by Underwriters' Laboratories' Inc.

Wall opening, 24x24x4 inches. Width overall, 25¼ inches.

No. FL-P1826C, Shipping Weight, 68 Pounds...each .....

No. LWP1826C Hall-Mack Seamless Bathroom Cabinets

Lifetime Porcelain Interior



An illuminated vanity wing cabinet. Light comes through wing mirrors to give perfect facial illumination. Heavy continuous hinges of chromium-plated brass permit wing adjustment for front, side, or rear view.

Four 25-watt T10 frosted lamps not included, but can be furnished.

Has three bulb edge glass shelves. Curved end brackets hold shelves in place. Chromium-plated shelf strips permit ½-inch up-and-down adjustment on shelves. Continuous one-piece piano hinge is welded to door. Heavy brass chrome channel frame eliminates mirror breakage.

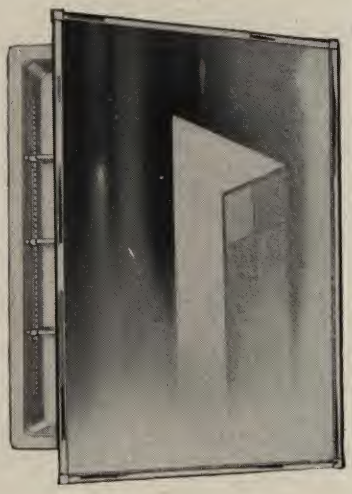
Approved by Underwriters' Laboratories, Inc.

Center mirror, 18x26 inches; wing mirrors, 8x26 inches. Wall opening, 16x24x4 inches.

No. LWP1826C, Shipping Weight 78 Pounds...each .....

Hall-Mack Seamless Bathroom Cabinets

Lifetime Porcelain Interior



The sprayed copper-backed mirror is guaranteed for 5 years against silver spoilage.

Has bulb edge glass shelves. Curved end brackets hold shelves in place. Chromium-plated shelf strips permit ½-inch up-and-down adjustment on shelves. Continuous one-piece piano hinge is welded to the door. Heavy brass chrome channel frame eliminates mirror breakage.

No.....	P1622C	P1626C	P1826C	P2030C
Each.....	.....	.....	.....	.....
Mirror.....in.	16x22	16x26	18x26	20x30
Wall Opening.....in.	14x20x4	14x24x4	16x24x4	18x28x4
No. of Shelves.....	2	3	3	3
Shipping Weight...lb.	31	35	39	48

No. PR24C Hall-Mack Seamless Bathroom Cabinets

Lifetime Porcelain Interior

A seamless round porcelain cabinet. The circular mirror door is bound with chromium-plated brass channel and hung on an extra heavy hinge of special design.

The 24-inch diameter mirror is guaranteed for 5 years against silver spoilage.

Has three bulb edge glass shelves. Heavy brass chrome channel frame eliminates mirror breakage.

Diameter of circular opening, 20½ inches.

Shipping weight, 45 pounds.

No. PR24C.....each .....

Hall-Mack Seamless Bathroom Cabinets

Baked Enamel Interior—Chrome Frame

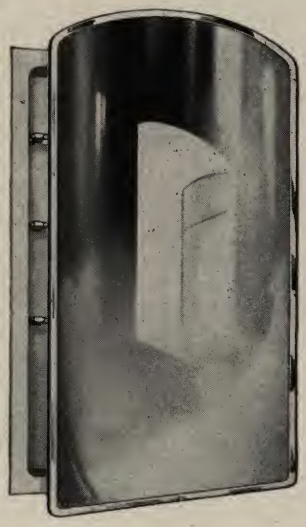
Curved end adjustable shelf brackets hold shelves in place. Three heavy bulb edge glass shelves. Seamless one-piece box with rounded corners cannot catch dirt.

Has razor blade slot and tooth brush holder. Continuous one-piece piano hinge welded to door. Brass chrome channel frame around all four sides reduces mirror breakage.

No.....	A1622C	A1626C	A1826C
Each.....	....	....	....
Mirror.....inches	16x22	16x26	18x26
Wall Opening.....inches	14x20x4	14x24x4	16x24x4
Shipping Weight.....pounds	27	31	38

Hall-Mack Seamless Bathroom Cabinets

Baked Enamel Interior—Chrome Frame



Curved end adjustable shelf brackets hold shelves in place. Three heavy bulb edge glass shelves. Seamless one-piece box with rounded corners cannot catch dirt.

Has razor blade slot and tooth brush holder. Continuous one-piece piano hinge welded to door. Brass chrome channel frame around all four sides reduces mirror breakage.

No.....	A1624C	A1828C
Each.....	....	....
Mirror.....inches	16x24	18x28
Wall Opening.....inches	14x20x4	16x24x4
Shipping Weight.....pounds	28	39

Hall-Mack Seamless Bathroom Cabinets

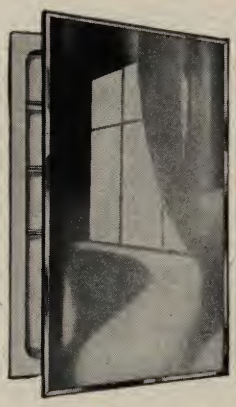
With Venetian Mirror

Copper backed plate glass mirror is guaranteed against silver spoilage. Seamless one-piece cabinet is finished in oven baked enamel. Rolled edge glass shelves. Three shelves furnished with 18-inch mirror cabinets. Frame on three sides of mirror is integral with door. Mirror held by polished monel metal clips.

No.....	F1622	F1826
Each.....	.....	.....
Size Mirror.in.	16x22	18x26
Opening....in.	14x20x4	16x24x4
Weight.....lb.	25	35

Hall-Mack Seamless Bathroom Cabinets

Baked Enamel Interior



Mirror has sprayed copper backing.

Mirror is bound on four sides by polished stainless steel channel which harmonizes with chromium plated bathroom trim. The seamless steel body is finished with oven-baked white enamel. Bulb edge glass shelves.

No.	Each	Mirror Inches	Wall Opening Inches	No. of Shelves	Ship. Wt. Lb.
*L1622C	....	16x22	14x20x4	2	23
*L1626C	....	16x26	14x24x4	3	27
†LW1622C	....	16x22	14x20x4	2	21
†LW1626C	....	16x26	14x24x4	3	25

*Plate glass mirror.

†Double strength window glass.

Hall-Mack Seamless Bathroom Cabinets

Baked Enamel Interior

Fitted with double strength window glass mirror of selected silvering quality. Mirror has sprayed copper backing. Mirror is completely bound with polished stainless steel channel which harmonizes with chromium plated bathroom trim.

Seamless one-piece cabinet is finished in oven-baked white enamel. Each cabinet has a razor blade slot. Rolled edge glass shelves. Mirror door is hung on heavy continuous hinge.

No.		CR1622C	CR1626C
Each		.....	.....
Mirror	inches	16x22	16x26
Opening	inches	14x20x4	14x24x4
No. of Shelves		2	3
Weight	pounds	23	29

Hall-Mack Wall Mirrors

Mirror is bound with chromium plated brass channel for protection.

Mirror is plate glass with copper backing guaranteed for five years against silver spoilage.

Behind the mirror is a steel back and concealed hanger.

Regularly furnished for vertical mounting but can be supplied on order to hang horizontally.

No.		M-A1218C	M-A1622C	M-A1826C
Each		.....	.....	.....
Size	inches	12x18	16x22	18x26
Weight	pounds	12	19	24

No. M-LW1622C Hall-Mack Wall Mirrors

Has polished stainless steel frame.

The mirror is double strength window glass, selected silvering quality, with sprayed copper backing.

Has steel back and concealed hanger.

Regularly furnished for vertical mounting but can be supplied on order to hang horizontally.

Size, 16x22 inches.

Weight, 18 pounds.

No. M-LW1622C...each .....

Sloan Quiet-Flush Equipment

Quiet-Flush Equipment is simple and efficient. Applied scientifically to the points where noise originates, it not only eliminates flush valve noise but permits the water-closet to operate with maximum quietness as well.

Equipment consists of two parts, each important for specific noises, and both essential to complete quietness.

The first is a quiet controlling stop, made in angle pattern only, which eliminates line noise and throttles the water supply down to the point where the bowl operates as quietly as its construction permits. A regular stop, or shut-off valve could not be throttled to this ideal point without creating additional noise in the stop itself.

The second part is a silencing unit which eliminates noises and hissing in the flush valve itself, consisting of a special guide for the Royal and a special guide and seat for the Star, Crown, and Naval.

Both parts of this equipment are completely interchangeable with standard Sloan parts and may be inserted in present installations without affecting any existing dimensions or roughing-in conditions.

Any of Sloan Royal, Star, Crown, or Naval Flush Valve installations where high pressure, or other noise-producing conditions exist, may be quieted simply and easily with Quiet-Flush Equipment.

When ordering for present installations, all that is required is the name of the flush valve now installed and the type of shut-off (angle or straight pattern) in order to secure the proper Quiet-Flush Equipment. For new installations, order Royal, Star, Crown, or Naval Quiet-Flush Valves.

Unit is boxed for each of the four valves complete, ready to install, and with full instructions. Any master plumber can make the change quickly.

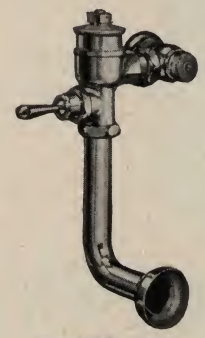
Prices and full information upon application.

No. 110F, Naval

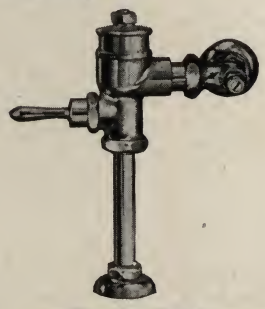
Sloan Naval Flush Valves

A flush valve of quality, made to stand up under severe conditions of ship service and afford dependable operation with dirty, sandy, corrosive, or salt water.

No. 110F Naval, with metal handle, 1-inch loose key angle stop, flush connection and coupling for 1½-inch top spud, wall and spud flanges.



No. 120F, Naval



No. 185, Naval

No. 120F Naval, with metal handle, 1-inch loose key angle stop, elbow flush connection and coupling for 1½-inch exposed back spud, wall and spud flanges.

No. 185 Naval, with metal handle, ¾-inch loose key angle stop and flush connection, and coupling for ¾-inch top spud, wall and spud flanges. For exposed supply urinals.

No. **110F** Naval, Chromium Plated.....each ....
No. **120F** Naval, Chromium Plated.....each ....
No. **185** Naval, Chromium Plated.....each ....

Sloan Flush Valves

Royal No. 110

Needs no adjustment, delivers a uniform flush, cannot be held open to waste water, may be used in buildings of every type and on fixtures of any manufacture.

Star No. 110

Has accurate adjustment of flush to suit fixture, a self cleansing by-pass, renewable main seat, large waterway which handles dirty or sandy water.

Sloan Quiet-Flush

Not only eliminates flush valve noise, but permits water closet to operate with maximum quietness as well. Royal and Star Flush Valves will be furnished with Quiet-Flush equipment, when so ordered, at a cost slightly greater than regular flush valves. For old installations, complete Quiet-Flush units, which are interchangeable with the old parts, should be ordered.

Sloan Vacuum Breakers

The V-100 series of Vacuum Breakers is the result of many years of experience in furnishing preventives of back-syphonage. These vacuum breakers cover a wide variety of conditions and, when properly installed, will prevent back-syphonage. Sloan Vacuum Breakers are accepted by the National Plumbing Laboratory.

No. V-100-A

Can be furnished to fit any make of valve.

Any closet bowl can be made syphon-proof by the proper installation of a Sloan Vacuum Breaker above the spill line of the fixture regardless of the degree of the vacuum or the suddenness with which it occurs.

No. V-100-B

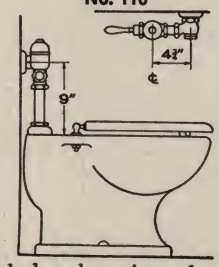
Designed to prevent back syphonage on fixtures with small supplies and low rates of flow such as are found in hospitals, hotels, restaurants, beauty parlors, etc.

Will not leak even if the flow is restricted to a trickle and, when properly installed, protects regardless of the vacuum conditions.

Furnished with inlet and outlet tapped for ⅜, ½ or ¾-inch I.P.S., as ordered.

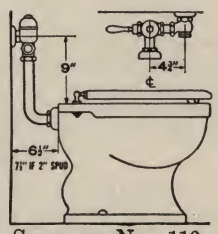
Installation Styles

No. 110



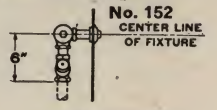
Includes chromium-plated flush valve with white metal oscillating handle, 1-inch wheel handle angle stop, flush connection and coupling for 1½-inch top spud and wall and spud flanges.

No. 120

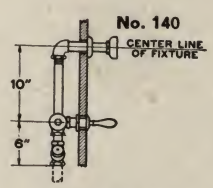


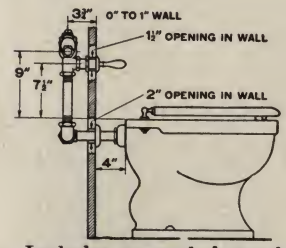
Same as No. 110 except with elbow flush connection and coupling for 1½-inch exposed back spud.

No. 152

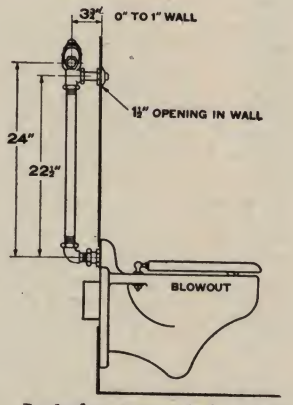


No. 140

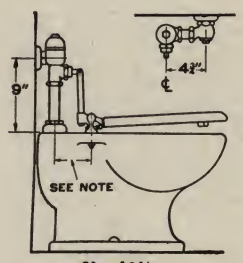




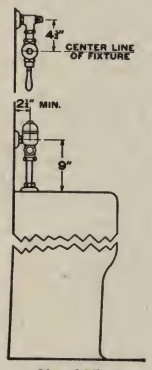
Includes concealed rough brass flush valve with chromium-plated white metal oscillating handle suitable for wall 0-1-inch thick, 1-inch wheel handle straight stop, elbow flush connection for 1½-inch exposed back spud, chromium-plated spud coupling and wall and spud flanges.



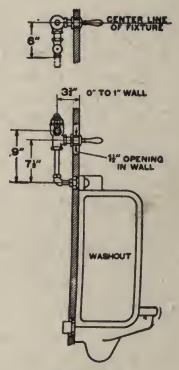
Includes concealed rough brass flush valve with chromium-plated white metal push button suitable for wall 0-1-inch thick, 1-inch wheel handle straight stop, 1½-inch slip joint brass elbow flush connection and spud coupling for concealed back spud, and chromium-plated wall flange.



No. 161



No. 185



No. 195

No. 161

Includes chromium-plated flush valve, seat operated, 1-inch loose key angle stop, flush connection and coupling for 1½-inch top spud, wall and spud flanges, adjustable bar check hinge and open front and back ebony composition seat for regular round front bowl.

No. 185

Includes chromium-plated flush valve with white metal oscillating handle, ¾-inch loose key angle stop, flush connection and coupling for ¾-inch top spud and wall and spud flanges.

No. 195

Includes concealed rough brass flush valve with chromium-plated white metal oscillating handle suitable for wall 0-1-inch thick, ¾-inch wheel handle straight stop, ¾-inch elbow flush connection and spud coupling for concealed back spud and chromium-plated wall flange.

Orders or Specifications Should State:

Name of valve—Royal or Star.

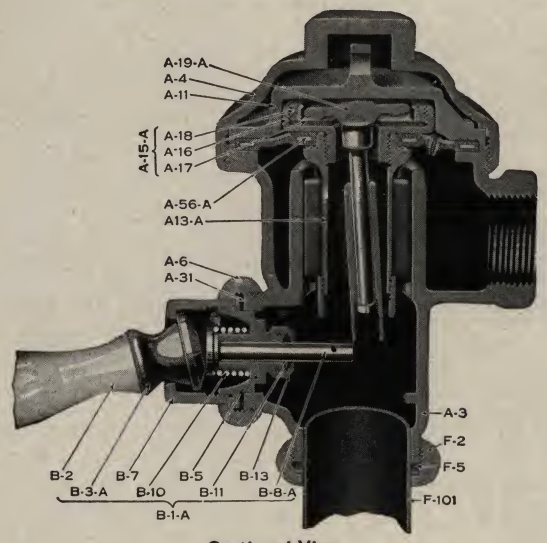
Installation number.

Letter designating variations, if any.

Flush Valve Variations

Letter	Description
F	With loose key stop.
H	Handle on front of valve.
Q	Quiet-flush equipment.
T	Flush connection for 1½-inch spud.
U	Flush connection for 1¼-inch spud.
V	Flush connection for 1-inch spud.
YG	With bumper on valve (for seat with cover).
YV	With Sloan Vacuum Breaker.

Royal Flush Valve Parts



Sectional View

Delivers a uniform amount of water, then closes, regardless of how long the operating handle is held down.

Requires no adjustment for variations in water pressure. Has no screws or other regulating devices. Suitable for exposed or concealed installation; top, back or side inlet fixtures, with either handle or push button on front, right or left-hand side, with straight or angle controlling stop and with straight or elbow flush connection.

A slight movement of the handle or push button results in a quick, complete flush—no strength or special method of operation is required. The only moving part is a complete unit which operates without friction.

The metal used in this valve is a uniform high grade bronze, heavily plated.

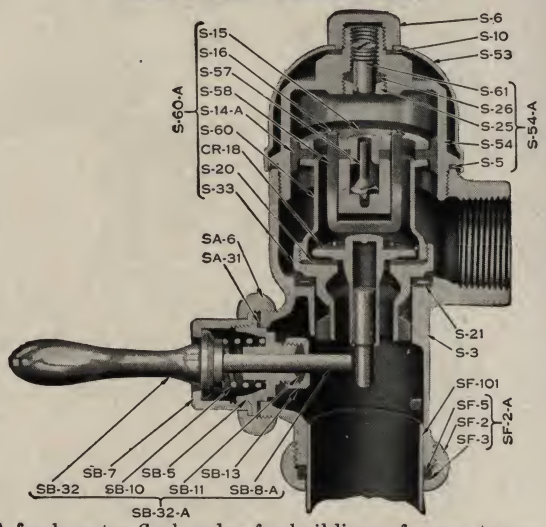
When wall hung closets are used, they require a pressure, maintained at the valve, of not less than 25 pounds for blow-out type, or 20 pounds for syphon jet type. Orders must state which type will be used.

All parts can be replaced as listed below.

Improved Royal Valve

No.	Name of Part	Each
A-4	Outside Cover	$2.50
A-11	Inside Cover	1.25
A-13-A	Guide	1.00
A-15-A	Disc Complete (New Style, one piece)	.50
A-17	Relief Valve Seat	.05
A-19-A	Relief Valve	.75
A-56-A	Segment Diaphragm	.70
	Improved Royal Outlet	
F-2-AT	1½-Inch Outlet Coupling Assembly	$.40
F-3-T	1½-Inch Friction Ring	.02
F-5-T	1½-Inch S. J. Rubber	.02
F-2-ATU	1½x1¼-Inch Outlet Coupling Assembly	.55
F-105	1½x1¼-Inch S. J. Rubber	.15
G-44	1½x1¼-Inch Friction Ring	.02
F-101	1¼ or 1½x7-Inch Outlet	.70
	Improved Royal Handle	
B-1-A	China Handle Assembled	$2.00
B-2	China Grip	.40
B-3-A	Handle Shank	.40
B-5	Handle Bushing	.40
B-8-A	Handle Plunger	.25
B-10	Handle Spring	.15
B-11	Handle Packing	.05
B-13	Handle Packing Nut	.10
B-32-A	Metal Handle Assembled	2.00
B-32	Metal Handle and Shank	.80
A-6	Handle Coupling	.40
A-31	Handle Gasket	.02
	Former Royal with Plain Diaphragm	
A-24	By-Pass Tube	$.05
A-25	Dowel	.02
A-26-A	Plain Diaphragm	.50

Star Flush Valve Parts



A fresh water flush valve for buildings of every type.

Has a large waterway and delivers an efficient flush and refill at all pressures between 10 and 100 pounds on plumbing fixtures of any manufacture.

A handy screw easily adjusts the flush to suit the fixture without shutting off the water. The Sloan Xpelor prevents clogging. All vital parts are of monel metal which resists wear and corrosion. A stable piston insures dependable operation. Has double cups.

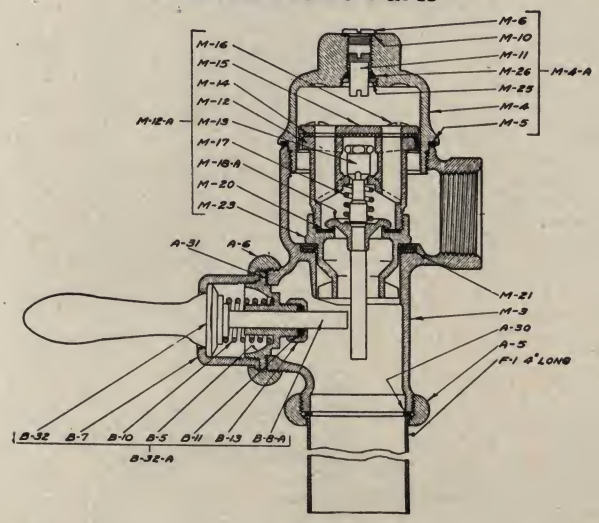
When wall hung closets are used, they require a pressure, maintained at the valve, of not less than 25 pounds for blow-out type, or 20 pounds for syphon jet type. Orders must state which type will be used.

All parts can be replaced as listed below.

Star Valve

No.	Name of Part	Each
S-60-A	Sloco Stable Piston Assembled	$3.75
S-15	Top Plate	.50
S-16	Top Plate Screw	.02
S-57	Xpelor	.25
S-58	Safety Bar	.10
S-14-A	Double Cups	.45
S-60	Stable Piston	.90
CR-18-A	Relief Valve	.75
S-20	Relief Valve Seat	.05
S-33	Guide for Valve with 1-Inch Inlet	.75
S-43	Guide for Valve with ½ or ¾-Inch Inlet	.75
S-6	Cover Nut	.30
S-10	Cover Nut Gasket	.02
S-53	N. P. Outside Cover	.50
S-54-A	Inside Cover Assembled	2.00
S-61	Regulating Screw	.15
S-26	Regulating Screw Packing	.05
S-25	Regulating Screw Packing Gland	.05
S-5	Cover Gasket	.10
S-21	Main Seat	.20
	Star Outlet	
SF-2-AT	1½-Inch Outlet Coupling Assembly	$.40
SF-3-T	1½-Inch Friction Ring	.02
SF-5-T	1½-Inch S. J. Rubber	.02
SF-2-ATU	1½x1¼-Inch Outlet Coupling Assembly	.55
F-105	1½x1¼-Inch S. J. Rubber	.15
G-44	1½x1¼-Inch Friction Ring	.02
SF-101	1¼ or 1½x7-Inch Outlet	.70
	Star Handle	
SB-32-A	Metal Handle Assembled	$2.00
SB-7	Handle Socket	.60
SB-32	Metal Grip and Shank	.80
SB-10	Handle Spring	.15
SB-5	Handle Bushing	.40
SB-11	Handle Packing	.05
SB-13	Handle Packing Nut	.10
SB-8-A	Handle Plunger	.25
SA-6	Handle Coupling	.40
SA-31	Handle Gasket	.02
SB-1-A	China Handle Assembled	2.00
SB-2	China Grip	.40
SB-3-A	Handle Shank for China Handle	.40

Marine Valve Parts



No.	Name of Part	Each
M- 3	Body	$6.00
M- 4-A	Cover Assembled	4.00
M- 4	Cover	3.50
M- 5	Cover Gasket	.10
M- 6	Cover Screw	.15
M-10	Cover Screw Gasket	.01
M-11	Regulating Screw	.15
M-12-A	Piston Assembled	4.00
M-12	Piston	1.00
M-13	Xpelor	.30
M-14	Cup Leather	.25
M-15	Top Plate	.50
M-16	Top Plate Screw	.02
M-17	Auxiliary Valve Spring	.10
M-18-A	Auxiliary Valve	.50
M-20	Auxiliary Valve Seat	.05
M-21	Main Sloco Seat	.20
M-23	Guide	1.00
M-25	Regulating Screw Packing Nut	.05
M-26	Regulating Screw Packing	.05
A- 5	Outlet Coupling	.40
A- 6	Handle Coupling	.40
A-30	Outlet Gasket	.02
A-31	Handle Gasket	.02
B- 1-A	China Handle Complete	2.00
B- 2	China Grip	.40
B- 3-A	Handle Shank	.40
B- 5	Handle Bushing	.40
B- 8-A	Handle Plunger	.25
B-10	Handle Spring	.15
B-11	Felt Washer	.05
B-13	Packing Nut	.10
B-32-A	White Metal Handle Assembl	2.00
B-32	White Metal Grip and Shan	1.00
F- 1	Outlet, 4 Inches Long	.40

No. 212 Sloan Floor Valves

For Stall Urinals

Sloan Floor Valve with nickel silver circular floor plate and push button.

Elbow flush connection from wall to ¾-inch top spud, wall and spud couplings and flanges, also construction floor plate (to protect valve during building operations).

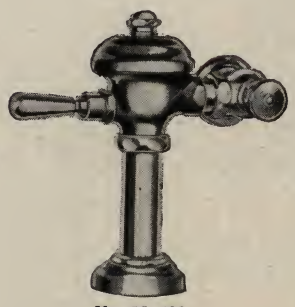
Orders or specifications should state installation number and letters designating variations:

U, for 1¼-inch spud; V, for 1-inch spud; and YT, with square floor plate for tile floor only.

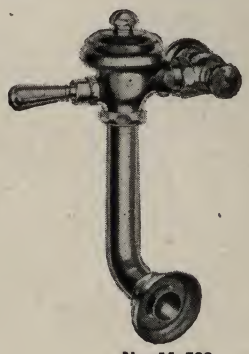
No. **212**.....each ....

Watrous Majestic Flush Valves

Diaphragm Type



No. M-532



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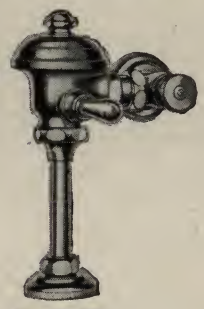
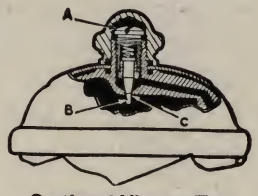


No. M-542



Sectional View of Top

Diaphragm type flush valve for use on all makes of fixtures and in all standard combinations. Provides uniform flush and refill at all pressures between 5 and 100 pounds.

Watrous water saver adjustment enables valve to be regulated to minimum water requirements of fixture on which it is installed by a slight turn of a screw; no need to take valve apart or even shut off water.

Self-cleansing by-pass is thoroughly cleansed at each operation of valve. This protects against lengthening of flushing time and assures trouble-free performance.

Full waterway. Has large diaphragm area and full travel of unit at every flush enables this valve to operate successfully even on low pressures.

Ease of operation. A slight pressure on the handle in anv direction assures quick, thorough flushing.

The cross section illustrates Watrous water saver adjustment, showing how length of flush can be regulated. The procedure is to remove cap nut, exposing regulating screw "A". Screwing "A" in or out reduces or increases opening between plunger "B" and seat "C", thus increasing or decreasing length of flush to exact requirements of fixtures used. Once adjusted for a particular fixture the delivery is uniform and permanent.

Body of valve is of high grade bronze, finished in heavy nickel or chromium plate.

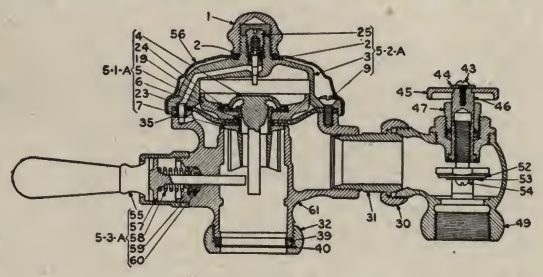
Exposed Type

No.	Description	Each
M-532	For Exposed Installation with Inlet to Right of Center Line of Top Spud Fixture	.....
M-533	For Exposed Installation with Inlet to Right of Center Line of Rear Spud Fixture	.....
M-542	For Exposed Installation with Inlet to Right of Center Line of Top Spud Urinal	.....

Concealed Type

M-536	For Concealed Installation with Inlet to Left of Center Line of Rear Spud Floor Bowl	.....
M-539	For Concealed Installation with Inlet to Left of Center Line of Rear Spud Wall Bowl	.....
M-541	For Concealed Installation with Inlet to Left of Center Line of Rear Spud Stall Urinal	.....

Watrous Majestic Flush Valve Parts



Part No.	Name of Part	Each
1	Cap Nut to Conceal Regulating Screw	$.50
2	Fiber Washers for Cap Nut (2 Required)	.04
3	Inside Cover	3.00
4	Relief Valve Complete	.40
5	Weight for Diaphragm	.50
6	Guide for Relief Valve	.30
7	Refill Disc	.70
9	Screws for Inside Cover (5 Required)	.04
19	Rubber Seat Washer for Relief Valve	.06
23	Rubber Diaphragm	.50
24	Wire Retaining Ring	.04
25	Regulating Screw Complete	.60
30	Coupling Nut for Shut-Off	.50
31	Coupling Nipple for Shut-Off	.50
32	Coupling Nut for Flush Connection	.60
35	By-Pass Tube	.04
39	Rubber Washer for Flush Connection	.08
40	Brass Friction Washer for Flush Connection	.04
43	Handle Screw	.04
44	Brass Handle Washer	.04
45	Wheel Handle	.20
46	Shut-Off Stem Assembly Complete	1.10
47	Stuffing Nut	.18
49	Shut-Off Body	1.60
52	Rubber Seat Washer	.04
53	Brass Seat Washer	.04
54	Brass Seat Washer Screw	.04
55	Handle Assembly Complete (Porcelain or Metal)	1.70
56	Shield or Outside Cover	.90
57	Operating Stem Complete	.30
58	Spring for Operating Stem	.12
59	Brass Retaining Ring for Handle Packing	.10
60	Packing for Operating Stem	.10
61	Valve Body	7.00

When ordering, give part No., name of part, and mention for Watrous Majestic flush valves.

Specialties

- It is not practical for us to list many items used for special service.
- Let us help you with problems where special material is required.

Si-Flo Flush Valve Compact Piston Units

No. K-9180

No. K-9184

No. K-9180. Complete for replacement and repair of all Si-Flo Flush Valves used in connection with all standard type water closets, pedestal and syphon jet urinals.

No. K-9184. Complete for all stall and flat back lipped urinals.

Prices and further information furnished on request.

Speakman Flush Valves

Si-Flo and Diamond flush valves have the following features: piston is made of hydraulically molded, noncorrosive, long-wearing plastic; adjustable connection between valve and stop; reversible main seat washer; and self-cleaning by-pass.

How to Order Diamond and Si-Flo Flush Valves. The Diamond flush valve line is complete. To make ordering easy, Diamond and Si-Flo flush valves carry the same catalog numbers. To order Diamond flush valves, use the regular Si-Flo numbers as listed in the catalog, adding the word Diamond.

Si-Flo Valves

Designed for quiet, economical operation. Compact in appearance and sturdy in construction, this valve will operate efficiently under all water conditions. It will not water-hammer or chatter and will not develop excessive back pressure in the supply line.

Equally adaptable to all fixtures requiring a metered quantity of water within the limits of the valve or supply capacity. It can be obtained with an oscillating handle or direct push-button when specified. Especially adaptable for use with showers, bed pan washers, sterilizers, urinals, slop sinks and autopsy sinks or any fixture requiring a definite quantity of water in a given time.

Will rough-in on standard and special measurements, and can be used to replace practically any type of flush valve now in use.

The piston unit contains all of the working or wearable parts of the valve except the handle assembly. In case repair becomes necessary, the replacement of this piston unit constitutes a complete repair of the valve.

Diamond Valves

Developed specifically to provide an economical and efficient means of water control for water closets and other fixtures requiring an automatic closing valve. Operates efficiently under all water conditions.

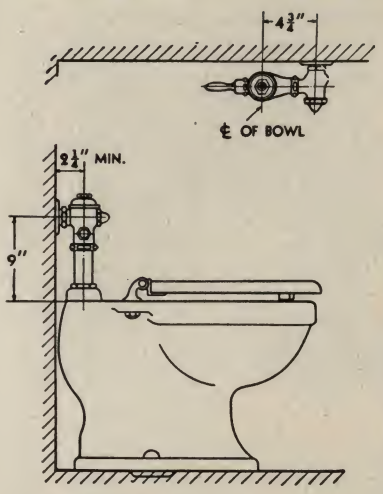
The piston unit contains all the working or wearable parts. Should repairs ever be necessary, replacement of this unit constitutes a complete repair of the valve.

Speakman Si-Flo Back Syphon Preventers

Designed to effectively prevent back-syphonage between any sanitary or hospital fixture and a potable water supply.

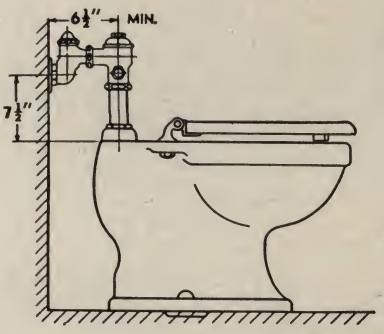
Simply constructed, and can be furnished to fit practically any flush valve or other valve-controlled sanitary fixture where a device, positive against back-syphonage, is necessary or required.

Speakman Exposed Si-Flo Flush Valves



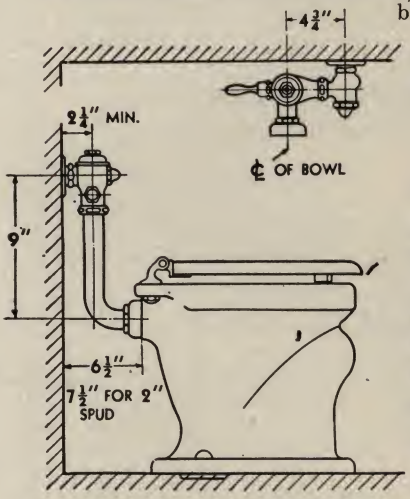
No. 9000 Closet Flush Valve

Chromium-plated Si-Flo closet flush valve with 1-inch capped angle stop on right and handle on left, wall flange, metal oscillating handle, flush connection, spud coupling nut and flange for 1½-inch top supply bowl.



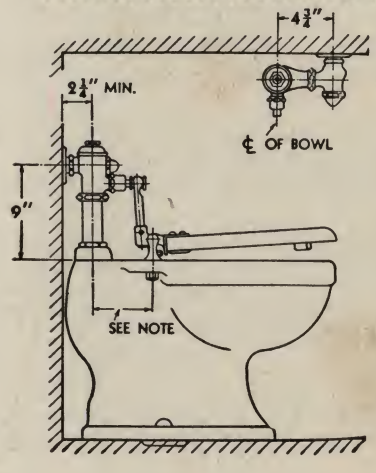
No. 9014 Closet Flush Valve

Chromium-plated Si-Flo closet flush valve with 1-inch capped straight stop, wall flange, metal oscillating handle on left, flush connection, spud coupling nut and flange for 1½-inch top supply bowl.



No. 9024 Closet Flush Valve

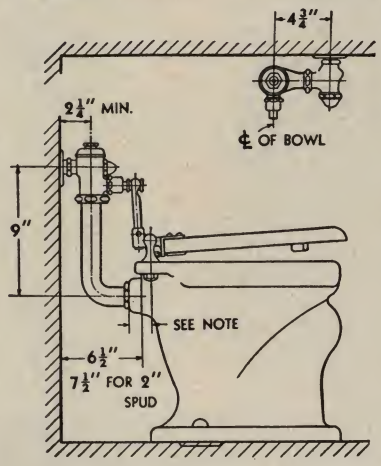
Chromium-plated Si-Flo closet flush valve with 1-inch capped angle stop on right and handle on left, wall flange, metal oscillating handle, elbow flush connection, spud coupling nut and flange for 1½-inch back supply bowl.



No. 9058 Closet Flush Valve

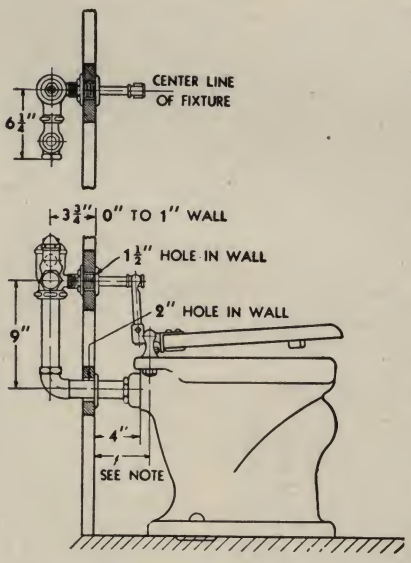
Chromium-plated Si-Flo seat-operated closet flush valve with 1-inch capped angle stop on right, wall flange, operating lever, flush connection, spud coupling nut and flange for 1½-inch top supply bowl.

Speakman Si-Flo Closet Flush Valves



No. 9062 Closet Flush Valves

Chromium plated Si-Flo seat-operated closet flush valve with 1-inch capped angle stop on right, wall flange, metal operating lever, elbow flush connection, spud coupling, and flange for 1½-inch back supply bowl.

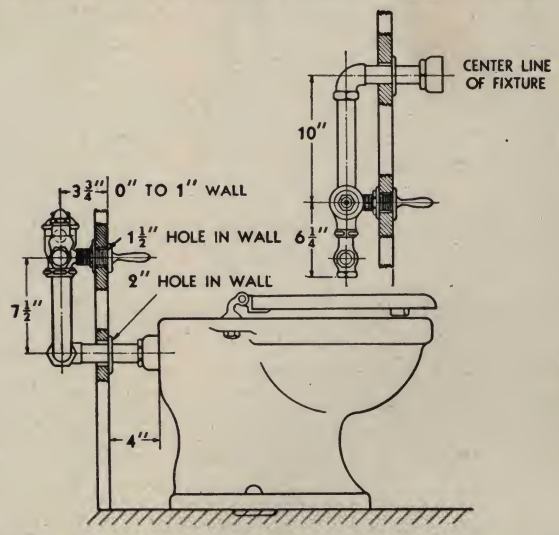


No. 9064 Concealed Closet Flush Valves

All-metal built-in Si-Flo seat-operated closet flush valve with 1-inch straight stop on left, wall and spud flanges, operating lever, elbow flush connection with slip joint, spud coupling, and flange for 1½-inch back supply bowl.

Orders must specify thickness of wall.

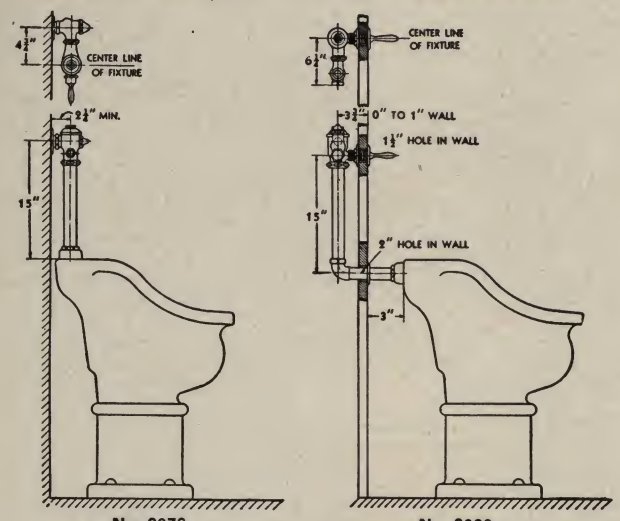
No. 9040 Concealed Closet Flush Valves



All-metal built-in Si-Flo closet flush valve with 1-inch straight stop on left, wall and spud flanges, metal oscillating handle on left, elbow flush connection with slip joint elbow, and flange for 1½-inch back supply bowl.

Orders must specify thickness of wall.

Speakman Si-Flo Urinal Flush Valves



No. 9076 No. 9080

No. 9076

Chromium-plated exposed Si-Flo urinal flush valve with 1-inch capped angle stop on right, and handle on left, wall flange, metal oscillating handle, flush connection, spud coupling, and flange for 1¼-inch top supply urinal.

No. **9076**.....each ....

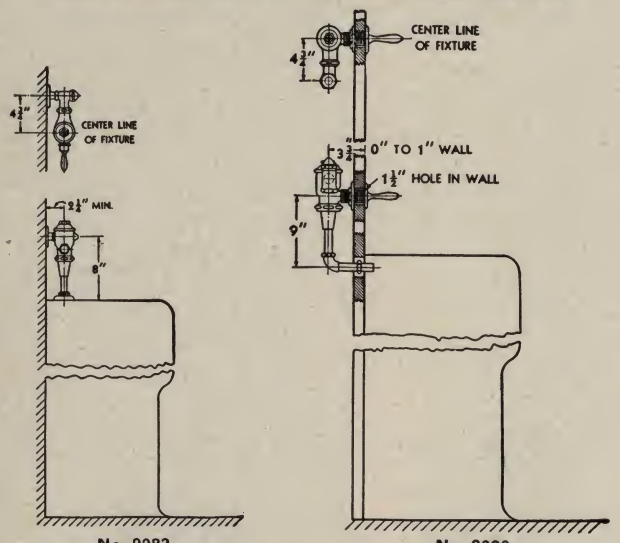
No. 9080

All-metal built-in Si-Flo urinal flush valve with 1-inch straight stop on left, wall and spud flanges, metal oscillating handle, elbow flush connection with slip joint, spud coupling, and flange for 1¼-inch back supply urinal.

Exposed metal chromium plated.

No. **9080**.....each ....

Speakman Si-Flo Urinal Flush Valves



No. 9082 No. 9086

No. 9082

Chromium-plated exposed Si-Flo urinal flush valve with ¾-inch capped angle stop on right, and handle on left, wall flange, metal oscillating handle, flush connection, spud coupling, and flange for ¾-inch top supply urinal.

No. K-**9082**.....each ....

No. 9086

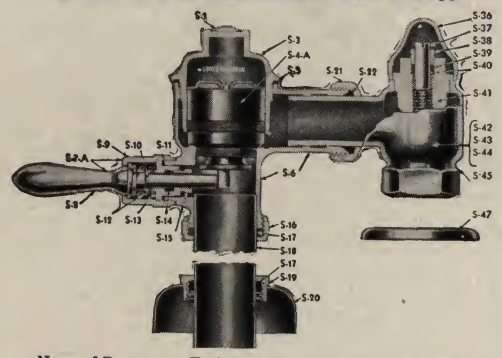
All-metal built-in Si-Flo urinal flush valve with ¾-inch angle stop on left, wall flange, metal oscillating handle, elbow flush connection with ¾-inch concealed back supply urinal.

Exposed metal chromium plated.

No. **9086**.....each ....

No. 9000 Speakman Flush Valve Parts

For Si-Flo and Diamond Flush Valves

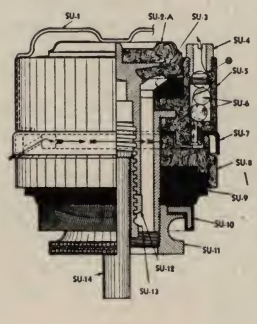


No.	Name of Part	Each	No.	Name of Part	Each
S-1	Si-Flo Index...	....	S-19	Spud Coupling Nut.....	....
S-3	Piston Cap....	....	S-20	Spud Escutcheon.....	....
S-4a	Piston Comp...	....	S-21	Expansion Nut.	....
S-5	Piston Cap Washer.....	....	S-22	Packing Ring..	....
S-6	Flush Valve Body.....	....	S-36	Dome Cap.....	....
S-7a	Handle Assembly....		S-37	Spindle.....	....
S-8	Metal Handle..	....	S-38	Packing Nut...	....
S-9	Handle Nut....	....	S-39	Packing.....	....
S-10	Handle Plunger	....	S-40	Brass Packing Ring.....	....
S-11	Fibre Washer..	....	S-41	Hub.....	....
S-12	Spring.....	....	S-42	Throttle Unit..	....
S-13	Packing Gland.	....	S-43	Seat Washer...	....
S-14	Packing.....	....	S-44	Brass Washer and Nut.....	....
S-15	Packing Nut...	....	S-45	Controlling Stop Body...	....
S-16	Outlet Coupling Nut.....	....	S-47	Wall Flange....	....
S-17	Outlet Washer.	....			
S-18	Outlet Tube...	....			

When ordering Nos. S-42, S-43 and S-44 for Diamond Flush Valves, specify Nos. SD-42, SD-43 and SD-44.

No. 9180 Speakman Piston Units

For Speakman Si-Flo Flush Valve



The bi-pass valve, No. SU-4, is self-cleaning. Each time the valve is flushed the water enters the holes in washer holder, No. SU-8, under cup leather, No. SU-7, and passes around groove to bi-pass chamber containing 2 Monel balls, No. SU-6.

As upper ball is approaching seat, a small quantity of water is forced ahead of the balls at a high velocity, cleansing the seat of all foreign matter.

The upper ball seals the seat with the exception of a small slot ⊗ which allows water at a predetermined rate to slowly fill the upper chamber. The pressure thus created slowly returns piston to its seat.

No.	Name of Part	Each
SU- 1	Monel Trip Valve Spring.....	....
SU- 2A	Trip Valve Complete.....	....
SU- 3	Trip Valve Moulded Washer.....	....
SU- 4	Bi-Pass Valve.....	....
SU- 5	Moulded Top Piston Assembly.....	....
SU- 6	5/32-Inch Monel Balls.....	....
SU- 7	Hydraulically Treated Cup Leather.....	....
SU- 8	Moulded Washer Holder.....	....
SU- 9	Moulded Main Seat Washer (Reversible)...	....
SU-10	Monel Wire Silencer.....	....
SU-11	Silencer Locknut.....	....
*SU-12	Trip Valve Locknut.....	....
*SU-13	Trip Valve Adjusting Sleeve.....	....
*SU-14	Trip Valve Plunger.....	....

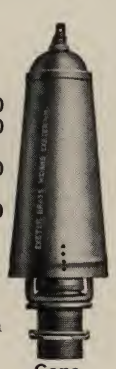
*No. Su-2A parts.

Syphons

Success

Success Bell Syphons

Price, 1¼-inch with Seat..each $3.40
" 1½ " " " " 4.60
" 1¼ " Bell Syphon Only.....each 2.00
Price, 1½-inch Bell Syphon Only.....each 3.00



Cone

Cone Syphons

All brass 1⅜-inch petticoat syphon valve with seat.

Price..... each $2.25

No. 201 Nibco Flush Valves

Ace—Heavy Pattern

Cast brass body with beveled rubber tank washer, brass lock-nut and beveled seat.

Has seamless brass overflow tube and non-adjustable guide.

Prices include both wires.

Packed 1 in a pasteboard carton.

No. **201**..... each ....

Nibco Ace Ball Cocks or Float Valves

No. 00

Ace ball cock with independent shut off and pressure adjusting spiral for quiet action.

Plunger retainer cap, removable hard chrome valve seat and roller-bearing action.

Furnished with ⅝-inch shank unless otherwise specified.

No. **00**. Elevated.....each ....
No. **01**, Back Supply.....each ....

Nibco Duce Elevated Ball Cocks or Float Valves

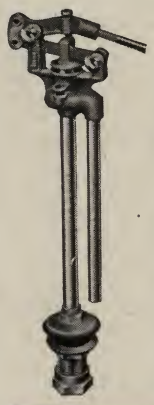
Duce elevated ball cock with water by-pass around end of plunger, valve seat under water level, and plunger retainer cap.

Made of steam bronze castings with unit cast supply and shank and copper hush and refill tubes.

Furnished with ⅝-inch shank unless otherwise specified.

No. **02**, with Bronze Seat.....each ...
No. **03**, with China Seat.....each ....
No. **04**, with Chrome Seat.....each ....

Nibco Jack Ball Cocks or Float Valves



Jack pressure-tested ball cock with ½-inch copper hush tube, monel metal seat screw, red brass supply, and unit link assembly.

Furnished with ⅝-inch shank unless otherwise specified.

No. **011**, Elevated with Red Brass Pipe Seat.....ea. ....
No. **06**, Elevated with China Seat..ea. .. .
No. **07**, Submerged with Bronze Seat .....each ....

Adjustor Water Controls

Ball Cock or Float Valve No. B-1939

Combination volume regulator and silencer, can be adjusted to permit control to operate quietly under pressures from 20 to 200 pounds. Refill taken off after pressure drop so that regulator controls bowl refill as well as tank supply. Removable seat is chromard-plated copper.
No. B-**1939**.....each ....

No. B-1939LS

Same as No. B-1939 except with repair shank 2½ inches long to slip ⅜ inch I. P. S. supply. Shank to slip ½ inch O.D. tubing supply furnished when specified.
No. B-**1939**LS.....each ....

M-VB Ball Cocks or Float Valves

No. 20

High tank, bottom supply ball cock. Couplings and lock nuts nickel-plated. Tailpiece threaded for ⅜-inch iron pipe.
No. **20**.....each ....

No. 55

Low tank compound lever ball cock. Couplings and lock nuts nickel-plated. 15/16-inch shank for ⅝-inch supply pipe, slip joint or collar.
No. **55**.....each ....

No. 60 Submerged Ball Cocks or Float Valves

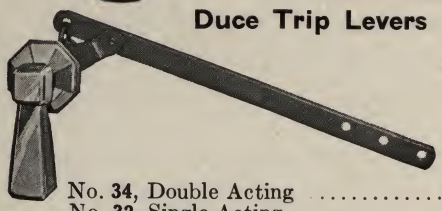
Low tank compound lever ball cock with special composition seat washer fitted to ¾-inch plunger by a brass retaining cap, swivel connection for float rod, 15/16-inch shank with locknut and slip joint coupling nut.
No. **60**.....each ....

No. 6707 Compression Ball Cocks or Float Valves

Size Inches	Rough Each	Size Inches	Rough Each
3/8	$1.40	1 1/4	$6.00
1/2	1.50	1 1/2	8.00
3/4	2.25	2	14.00
1	3.75	...	.....

Prices are for ball cock only, without ball.

Duce Trip Levers

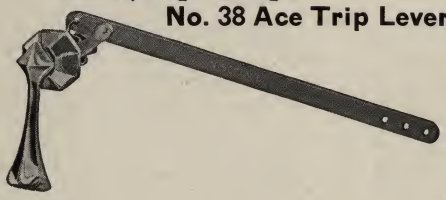


Chromium finish on die casting.

Individually boxed.

No. **34**, Double Acting .....each ....
No. **32**, Single Acting.....each ....

No. 38 Ace Trip Levers



Double acting trip lever. Chromium finish on brass forging.

Individually boxed.

No. **38**.....each ....

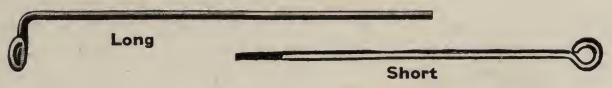
No. 39 Jack Single Action Trip Levers

Chromium finish on brass forging. Cast brass arm.

Weight per 100 pieces, 60 pounds.

No. **39**.....each .....
Extra for Thick Tanks.....each .....

Lift Wires



	Short		Long
No.....	1049	1049A	1050
Length.....in.	4 3/4	6	9
Per 100.....	....	....	....

No. 12 Plain Wood Closet Pulls

Price, Oak, with Rubber Ring....each ....

" China or Celluloid.....each ....

No. 610 Lucky Strike Hard Rubber Floats

Molded from hard rubber compound.

Will not crack, break, or dent in usage. Watertight, non-absorptive, and unaffected by alkaline solutions.

Size, 4x5 inches.

Standard package, 12.

No. **610**.....each ....

Solderless Copper Floats

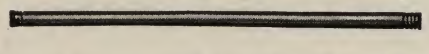
Round

Oval

Size.....inches	5	5x4
Round.....each	*....	....
Oval.....each	....	*....
Stems for Round or Oval Floats.....each	*....	*....

*Made in these sizes only.

No. 6822 Regular Float Rods



Length.....inches	6	7	8	9	10
Price.....per dozen	....	....	....	....	....

With one end threaded regular and float ball end with running thread for adjustment.

Length.....inches	6	8	10	12
Price.....per dozen	....	....	....	....

No. 363 Brass Threaded Rods

Length.....inches	12	24
Diameter..... inches	1/4	1/4
No. **363**.....each	....	....

Overflow Tubes for Flush Valves

Length, 11 inches.

No.....	2368	2370	2372
Unfinished Brass.....each	....	....	....
Outside Diameter.....inches	1	1 1/8	1 1/4
Brown and Sharpe Gauge.....	20	20	20

No. 2374 Annealed Brass Refill Tubes

Annealed brass tubing, 1/4-inch o.d. Threaded one end.

Size.....inches	10	16
No. **2374**.....each	....	....

Flush and Supply Pipe Holders

No. 1102, Supply

No. 1098, Flush

Size Inches	N.P. Each	C.P. Each	Size Inches	N.P. Each	C.P. Each
3/8 I.P.	....	....	1 1/4 O.D.	.....	.....
1/2 I.P.	....	....	1 3/8 O.D.	.....	.....
3/4 O.D.	....	....	1 1/2 O.D.	.....	.....

No. 971 Adjustable Guide Holders

Unfinished Brass

Will slip on a 1, 1⅛ or 1¼-inch overflow tube for a standard Douglas pattern low tank valve.

Packed 25 in a box.

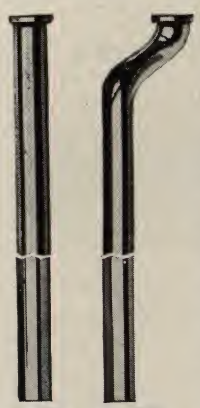
Size.....in.	1	1⅛	1¼
No. 971..ea.	...	...	...

Adjustable Guide Holders

Guides are adjustable to fit any type Douglas valve.
Rough brass finish.
Packed 25 in a box.

No	473	474	475
Each	....	....	....
For O. D. Tube.....inches	1	1⅛	1¼

High Tank Flush Pipes



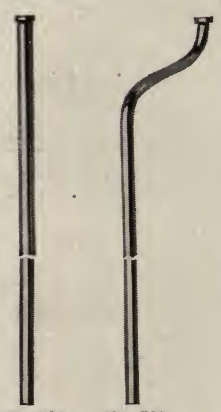
No. 796 Straight — No. 797 Offset

Regularly furnished with collar for 1½-inch I.P. connection. Can be furnished with single ring when specified.

Wrapped in paper individually.

Size In.	No. 796, Straight N.P.	C.P.	No. 797, Offset N.P.	C.P.	Gage	Lgth. Ft.
1¼	....	....	....	....	22	5½
1¼	....	....	....	....	20	5½
1¼	....	....	....	....	22	6
1¼	....	....	....	....	20	6
1¼	....	....	....	....	17	6
1⅜	....	....	....	....	22	6
1⅜	....	....	....	....	17	6
1½	....	....	....	....	22	5½
1½	....	....	....	....	20	5½
1½	....	....	....	....	17	5½
1½	....	....	....	....	22	6
1½	....	....	....	....	20	6
1½	....	....	....	....	17	6

High Tank Supply Pipes



No. 798 Straight — No. 799 Offset

Regularly furnished with collar for ball cock coupling nut.

Wrapped in paper individually.

No. 798 Straight

O.D. In.	N.P. Each	C.P. Each	Gage	Length Feet
⅝	....	....	17	7
21/32	....	....	Full ⅜-In. I.P.	7
21/32	....	....	14	7

No. 790 Offset

⅝	....	....	17	7
21/32	....	....	Full ⅜-In. I.P.	7
21/32	....	....	14	7

Low Tank Straight Closet Supplies

Formed Collars One End—Threaded Other End

No. 765, Plain

Stops can be furnished less stuffing box when specified.

Supplies furnished 19 inches long when specified.

No. 766, with Stop

No. 765, Plain

Lgth. In.	I.P.S. In.	Fin. N.P. 14-Ga. Each	I.P.S.S. Each	C.P. 14 Ga. Each	I.P.S.S. Each
19	⅜	.....	.....	.....	.....
21	⅜	.....	.....	.....	.....

No. 766, with Stop

19	⅜	.....	.....	.....	.....
21	⅜	.....	.....	.....	.....

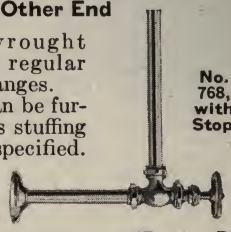
Low Tank Angle Closet Supplies

Formed Collars One End —Threaded Other End

No. 767, Plain

With wrought sawtooth regular pattern flanges.

Stops can be furnished less stuffing box when specified.



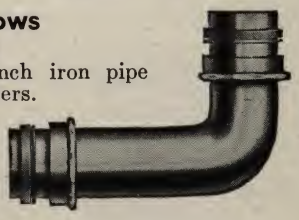
No. 768, with Stop

No	767	768
14-Gage, Finished N.P.....each	.....	.....
I.P.S.S., Finished N.P.....each	.....	.....
14-Gage, C.P.....each	.....	.....
I.P.S.S., C.P.....each	.....	.....
Size.....inches	4x6	4x6
I.P.S.....inches	⅜	⅜

Slip Joint Elbows

For Low Tank

Chromium-plated, with 2-inch iron pipe size cast nuts and rubber washers.



No.	Size Inches	No.	Size Inches
871	3½x5	875	5x 8
880	4 x6	876	6x 8
1677	5 x7	4152	8x12

For High Tank

Chromium-plated, with nuts and washers.

No.	Spud In.	Inlet In.	Length In.
347	1¼	1¼	6
351	1¼	1¼	8
348	1¼	1½	6
350	1½	1½	6

Closet Flush Connections

Chromium-plated, two 2-inch iron pipe thread nuts and rubber washers.

No. 888, Offset

Offset Connections

No.	Each	Offset In.	Lgth. In.
3153	....	1	6
885	....	1½	6
886	....	2	6
887	....	2½	6
888	....	3	6
889	....	3½	6
890	....	4	6

Straight Connections

1497	....	...	6

No. 1497, Straight

Cast Brass Closet Spuds

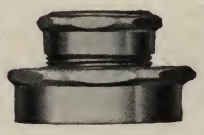
Regular

No. 7021, I.P. Size 1¼-Inch.....each .....
No. 7022, I.P. Size 1½-Inch.....each .....
No. 7023, I.P. Size 2-Inch.....each .....

Reducing

No. 6780, I.P. Size 2x1¼-Inch..each .....
No. 6781, I.P. Size 2x1½-Inch..each .....

Closet Spud Reducers



No. 484, 2-Inch I.P. x 1¼-Inch O.D. Slip Joint.....each .....

No. 486, 2-Inch I.P. x 1½-Inch O.D. Slip Joint.....each .....

Cast Brass Closet Floor Flanges

For 4-Inch Iron Pipe

No. 940, Inside Thread

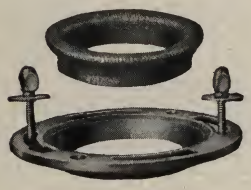
No. 950, Outside Thread

Outside diameter, 6¾ inches. Inside diameter, 5¼ inches. Center to center bolt holes, 5 13/16 inches. Height, 2⅛ inches.

Weight, 4¼ pounds.

No. **940**, Inside Thread.....each **$2.50**
No. **950**, Outside Thread.....each **2.50**

No. 711 Renton Floor Flanges



Floor flange for lead pipe, with bolts, washers and asbestos graphite gasket.

No. **711**.....each ....

No. 930 Lucky Strike Asbestos Closet Floor Flange Rings

For use with brass floor flanges.

Made of soft asbestos, graphited finish.

Standard package, 25.

Size, Inches I.D.	O.D.	Each
3½	4¼	.....
3¾	5	.....
4	5½	.....

No. 940 Lucky Strike Closet Floor Flange Gaskets

Old Style

Made of black rubber; ribbed on one surface.

I.D., 4¼ inches; O.D., 7 inches; thickness, ¼ inch.

Standard package, 25.

No. **940**.....each .....

No. 910 Lucky Strike Toilet Bowl Cushion Rings

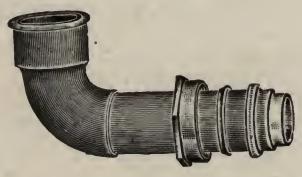
Made of soft, treated, tan, sponge rubber, eliminating use of putty and oil.

I.D., 3½ in.; O.D., 5⅜ in.

Individually boxed.

Thickness.in.	⅝	¾	1
Each.....	.....	...	....

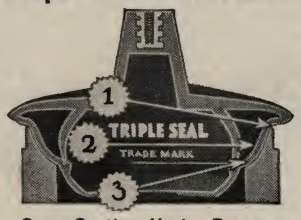
No. 8547 Rubber Closet Elbows



Size 1¼ inch; regular pattern.

Price, No. **8547**
.....per dozen **$7.20**

Triple Seal Tank Balls



Cross Section Under Pressure

A patented flush ball that provides a 3-way, triple seal on the valve seat.

Ball is light and buoyant and allows a complete flush. Will not stick to valve. Flexible neck permits a perfect seat even if the rod is not straight.

Packed in individual cartons; 12 in a display box.

Standard Size, Fits Openings 2¼ through 2⅝ In.each ....
Oversize, Fits Openings 2¾ through 3 Inches....each ....

Servall Tank Balls

Made in one size only, but designed to fit four popular sizes of flush valves; 2⅜, 2½, 2⅝, and 2¾ inches.

Packed 12 boxes to a carton.

Per Dozen..... **$3.50**

Erco Rubber Tank Balls

Made of a high quality of white or pink rubber with a hard top and soft bottom. Packed 1 dozen in a box, or in individual cartons.

Size Inches	Each Price	Size Inches	Price Each
2	$.40	2⅝	$.55
2¼	.45	2¾	.60
2½	.50	3	.65

Mushroom Parabal Tank Balls

This peculiar shape enables the Mushroom Parabal to fit well down into the valve seat, stopping all trickle and waste of water.

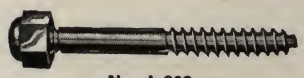
Pliable and elastic, the Parabal touches every point in the seating surface of the valve, the water pressure from above against the outstanding lip closing the valve, regardless of how irregular the valve seat may be.

Price.....each **$1.25**

No. 6802 Rubber Furnace Bulbs

Per Dozen Bulbs	Tubes
$6.00	1.20

Brass Closet Screw Combinations


No. J-208

No. 2410 Round Washer

No. 2414 Oval Washer

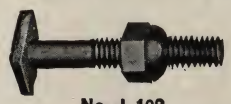
Combinations consist of washer, nut, and screw.

With ¼x2½-Inch Brass Screws

Round Washer	Oval Washer
No. J-208, Hvy. Nut.ea. ...	No. J-210, Hvy. Nut.ea. ...
No. J-220, Lt. Nut..ea. ...	No. J-222, Lt. Nut..ea. ...

Combinations containing 5/16x2½-inch brass screws can be furnished.

Brass plated iron screws are also available.


No. J-108

Brass Closet Bolt Combinations

Combinations consist of washer, nut, and bolt.

With ¼x1¾-Inch Brass Bolts

Round Washer	Oval Washer
No. J-108, Hvy. Nut.ea. ...	No. J-110, Hvy. Nut.ea. ...
No. J-112, Lt. Nut...ea. ...	No. J-114, Lt. Nut...ea. ...

With 1¼x2¼-Inch Brass Bolts

Round Washer	Oval Washer
No. J-124, Hvy. Nut.ea. ...	No. J-126, Hvy. Nut.ea. ...
No. J-128, Lt. Nut...ea. ...	No. J-130, Lt. Nut...ea. ...

Combinations containing 5/16x1¾-inch or 5/16x2¼-inch brass bolts can be furnished.

Brass Nuts for Closets

For Screws

No.	984	992	994
Per 100	....	....	....
For Screw Size.....in.	¼	¼	5/16

For Bolts

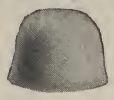
No.	1000	1006	1010
Per 100	....	....	....
For Bolt Size.....in.	¼	¼	5/16

No. 984

No. 1000

No. 4120 Vitreous China Bolt Caps

For Floor Screws



White vitreous china bolt caps to set over brass floor screws.

No. **4120**.....each ....

No. F-4220 China Covers

No. 5 No. 6 No. 7 No. 8

China covers for use only on certain "Standard" fixtures having Neo-Classic Base as follows:

No. 5

Teriston closet, No. F-2020.

No. 6

Custom Madera closet, No. F-2030 (rear); Custom Devoro closet, No. F-2035 (rear).

Madera closet bowls, No. F-3122.

Devoro closet bowls, No. F-3142.

No. 7

Master One-Piece closet, No. F-2000 (rear); One-Piece closet, No. F-2005 (rear). Elongated Compact closet, No. F-2040 (rear); Compact closet No. F-2045 (rear).

No. 8

Master One-Piece closet, No. F-2000 (front); One-Piece closet, No. F-2005 (front). Custom Madera closet, No. F-2030 (front); Custom Devoro closet, F-2035 (front). Elongated Compact closet, No. F-2040 (front); Compact closet, No. F-2045 (front). Bidets, Nos. F-5005, F-5025 (front and rear).

No. 10 Church Offset Post Bar Hinges

For 1-Inch Seat

Chromium-plated brass offset post bar hinge, for closet seat and cover.

No. **10**.....each ....

No. 68 Mastercraft Offset Post Bar Hinges

Chromium-plated closet offset post bar hinges, for seat and cover.

Per Pair..... .....

Church Cast Brass Closeruf Hinges

Chromium-plated brass closeruf bar type hinge for closet seat and cover.

No. **77**, for 1¼-Inch Seat..each ....

No. **78**, for 1½-Inch Seat..each ....

No. 71 Church Cast Brass Check Hinges

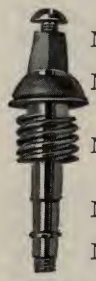
For 1¼-Inch Seat

Chromium-plated brass bar type check hinge for closet seat without cover.

No. **71**.....each ....

Quaturn Quick Compression Parts

Quaturn Parts are standardized; one working unit fits all Quaturn bath cocks, basin cocks, sink faucets, and bibbs.



Brass Stems

No. **1-17**, Hdle. Screw....ea. **$.02**

No. **1-19**, Conical Packing Washer...ea. **.05**

No. **1-20**, Brass Packing Washer...ea. **.01**

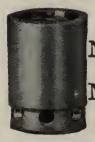
No. **1-16**, L. H. Stem....ea. **.35**

No. **1-15**, R. H. Stem.....ea. **.35**

Complete Units

No. **1-100**, L. H..ea. **$.86**

No. **1-99**, R. H. ea. **.86**

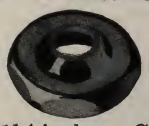


Brass Sleeves

No. **1-28**, L. H.....ea. **$.29**

No. **1-29**, R. H.....ea. **.29**

No. 1-14 Brass Caps



Size 1¼ inches. Chromium-plated.

No. **1-14**.....each **$.29**

No. 1-27 Brass Seats

No. **1-27**, ..ea. **$.05**

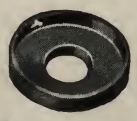
No. 1-21 Seat Washers

No. **1-21**, ..ea. **$.03**

No. 1-31 Stem Nut Washers

No. **1-31**.....each **$.01**

No. 1-22 Brass Washer Retainers



No. **1-22**.....each **$.05**

No. 1-18 Brass Stem Nuts

No. **1-18**.....each **$.05**

Penberthy Faucet Adapters

No. 6 Universal Type

Instantly and easily installed or removed. As the part coming in contact with faucet forms a soft rubber cushion, it will not scratch or mar the most highly finished surface. Metal parts are made of brass and nickel-plated.

Packed 1 dozen in a box.

No. 6 ..... each **$.50**

No. 105 Fuller Adjustable Stems

Size of Bibb	inches	½	¾
Price, with Ball	each	**$.40**	**.45**

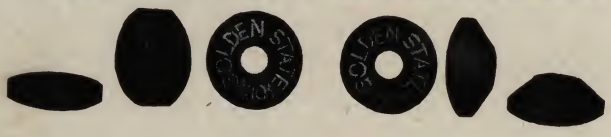
These stems fit any style or size of Fuller bibb.

Brass Nuts and Screws

A partitioned metal box containing one gross assorted nuts and screws for every size bibb.

Brass Nuts and Screws ..... per assortment **$3.00**

Golden State Flat or Bevel Faucet Washers

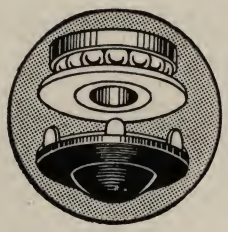


A flexible, hand trimmed, individually molded washer of special compound. Resists ravages of hot water, steam, and abrasion. Packed in a lock-top can.

Trade Size, In.	Actual Diam., In.	No. in Pkg.	Per 100	Trade Size, In.	Actual Diam., In.	No. in Pkg.	Per 100
No. 00	½	100	**$2.75**	½ Large	25/32	100	**$2.75**
¼	9/16	100	**2.75**	⅝	13/16	50	**3.85**
¼ Large	19/32	100	**2.75**	⅝ Large, Bevel	27/32	50	**3.85**
⅜	⅝	100	**2.75**	¾ Bevel	⅞	50	**3.85**
⅜ Med.	21/32	100	**2.75**	¾ Flat	15/16	50	**3.85**
⅜ Large	11/16	100	**2.75**	1 Bevel	1⅛	25	**5.50**
½	¾	100	**2.75**	1 Flat	1 9/64	25	**5.50**

No. 5200 Sherman Water Miser Faucet Washers

Ball Bearing



This washer eliminates grinding of washer against valve seat. Washer is not ground against valve seat, but is pressed straight down against seat, producing a positive, leak-free contact. Ball bearing is made with non-corrosive, monel metal balls and bronze ball races. Washer cap is made from a specially developed heat-resisting formula.

Packed 12 in a carton. Weight per carton, ½ pound.

Size	inches	¼	⅜	½
No. 5200	dozen	**$3.95**	**3.95**	**3.95**
Outside Diameter	inches	35/64	⅝	¾
Washer Caps Only, All Sizes	each	**$.13**		

Dripruf Faucet Washers

Scientifically compounded to withstand heat, friction, and minerals. Will not become gray, hard, or brittle with age. Shuts off easily and opens quickly.

In Cans

Size In.	Per 100	Size In.	Per 100	Size In.	Per 100
No. 00	**$1.60**	⅜	**$2.00**	½L	**$2.40**
No. 0(R.N.)	**1.70**	⅜M	**2.00**	⅝	**3.00**
¼	**1.70**	⅜L	**2.00**	¾	**3.80**
¼L	**1.80**	½	**2.40**	1	**5.00**

No. 2A, Pocket Pack

Compact convenient sturdy steel kit, drawn from 26 gage metal. Baked enamel finish. Hinged cover. Rounded corners. Pocket size.

Complete with 10 each of No. 00, ⅜ in. M, and ½ in.; 32 of ¼ in.; 50 of ¼ in. L; 62 of ⅜ in.; and 26 of ⅜ in. L.

No. 2A ..... each **$3.90**

No. 60 Asbestos and Rubber Compound Beveled Faucet Washers

Light gray in color.

Size Inches		Std. Pkg. Per 100	Size Inches		Std. Pkg. Per 100
¼	Small	**$1.75**	½	Regular	**$2.35**
¼	Regular	**1.85**	½	Large	**2.60**
¼	Large	**2.00**	⅝	Regular	**2.75**
⅜	Regular	**2.10**	1	Regular	**3.00**
⅜	Large	**2.25**	.....		**3.50**

No. 70 Asbestos and Rubber Compound Flat Faucet Washers

Light gray in color.

Size Inches		Std. Pkg. Per 100	Size Inches		Std. Pkg. Per 100
¼	Small	**$1.40**	⅜	Large	**$1.90**
¼	Regular	**1.50**	½	Regular	**2.05**
¼	Large	**1.60**	½	Large	**2.10**
⅜	Regular	**1.75**	⅝	Regular	**2.35**

No. 80 Red Fibre Flat Faucet Washers

Size Inches		Per 100, Std. Pkg.	Size Inches		Per 100, Std. Pkg.
¼	Small	....	½	Regular	....
¼	Regular	....	½	Large	....
¼	Large	....	⅝	Regular	....
⅜	Regular	....	¾	Regular	....
⅜	Large	....	1	Regular	....

Leather Faucet Washers

Made for either hot or cold water. Specify which is wanted in ordering.

Size Inches	Per 100
⅜	....
½	....
⅝	....
¾	....

No. 1320 Lucky Strike Double Beveled Washers

For Mueller Faucets

Made of hard, black rubber to withstand either hot or cold water. Hole, 5/32 inch.

Standard package, 100.

Diameter	inches	9/16	11/16	¾
No. 1320	per 100	**$2.00**	**2.50**	**3.25**
Thickness	inches	11/32	⅜	⅜

Float Valve Washers

Solid

No.	749	748	746
Per 100	$3.00	3.00	3.00
Diameter ... in.	9/16	5/8	13/16

Open

No.	747	1116	1463
Per 100	$3.00	3.00	3.00
Diameter ... in.	9/16	19/32	5/8

No. 240 Top Washers

For Compression Work

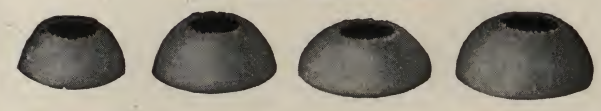
Made of laminated plies of closely woven fabric which will not separate.

Has 5/16-inch hole. Thickness, 3/32-inch.

For Faucet Size inches	1/4	3/8	1/2	5/8	3/4	1
No. 240 ... per 100	$3.35	3.75	4.10	5.00	5.75	6.60
O.D. ... inches	7/8	15/16	1 1/16	1 3/16	1 5/16	1 9/16
Weight per 100 ... pounds	3/8	1/2	5/8	3/4	7/8	1 1/4

No. 200 Cone Washers

For High Stem Caps



Size ... inches	3/8	1/2	5/8	3/4	1
No. 200 ... per 100	...	...	...	...	...

No. 90 Fuller Balls

Size ... inches	3/8	1/2	9/16	5/8	11/16	3/4	1
Per 1-Lb. Std. Pkg.	$2.00	2.00	2.00	2.00	2.00	2.00	2.00

No. 1652 Blunt Edge Syphon Valve Washers

Size Inches	Price per Doz.	Size Inches	Price per Doz
1	$1.30	1 5/8	$1.75
1 1/8	1.50	1 3/4	1.80
1 1/4	1.55	1 7/8	1.95
1 3/8	1.60	2	2.05
1 1/2	1.70	...	....

No. 400 Rubber Featheredge Syphon Washers

Size Inches	Price per Dozen	Size Inches	Price per Dozen
1	$1.45	1 5/8	$1.85
1 1/8	1.55	1 3/4	1.95
1 1/4	1.70	1 7/8	2.05
1 3/8	1.75	2	2.15
1 1/2	1.80	...	....

Regular width of flange 5/8 inch.

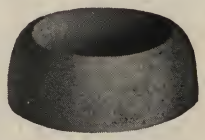
No. 8630 Beveled Syphon Rings

Size Inches	Inside Diam. Inches	Outside Diam. Inches	Price per Dozen
1	1	1 7/8	$1.20
1 1/4	1 1/4	2 3/16	1.45
1 1/2	1 1/2	2 7/16	1.70

Waste Washers

No. 8676 Ideal

Size Inches	Price, per Dozen Ideal	Unique
1	$.85	$.85
1 1/4	1.10	1.15
1 1/2	1.35	1.45



No. 8638 Unique

No. 1400 Test Plug Rubbers

Size Inches	Each
2	$.36
3	1.00
4	1.44
5	1.60
6	1.90

Rubber Tack and Screw Bumpers

No. 1736 Tack

Diameter Inches	Per 100
3/8	$1.40
1/2	1.60
5/8	1.80
3/4	3.40

No. 734 Screw

Diameter Inches	Per 100
3/4	$5.00
7/8	6.00
1	7.50
...	....

No. 1801 Seat Rubbers

Diameter Inches	Per 100	Hole Inches	Height Inches
1 3/16	$4.50	1/2	3/8
1 3/16	8.00	3/8	9/16

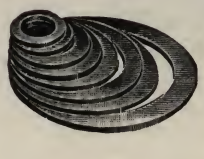
No. 461 Bar Bumpers

Length Inches	Per 100	Width Inches	Height Inches
1 5/8	$6.00	1/2	3/8
2 1/8	7.00	1/2	3/8

No. 3500 Rubber Slip Joint Washers

Size Diam. In.	Price per 100	Size Diam. In.	Price per 100	Size Diam. In.	Price per 100
1/4	$1.40	7/8	$2.10	1 5/8	$3.70
3/8	1.50	1	2.30	1 3/4	4.10
1/2	1.60	1 1/4	2.60	1 7/8	4.50
5/8	1.70	1 3/8	2.90	2	5.10
3/4	1.90	1 1/2	3.30	...	....

No. 1017 Rubber Union Washers



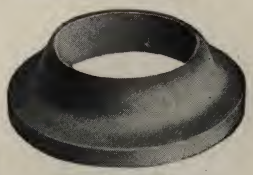
I.P.S. Union Inches	Each Per 100	I.P.S. Union Inches	Each Per 100
1/8	$.90	1 1/4	$3.60
1/4	1.00	1 1/2	5.60
3/8	1.10	2	6.00
1/2	1.40	2 1/2	8.00
3/4	1.80	3	13.00
1	2.60	...	.....

No. 5525 Union Washers

Size Inches	Price, per 100 Fibre	Paper	Leather
3/8	$1.00	$.25	$.25
1/2	1.40	.35	.30
3/4	1.60	.40	.35
1	1.75	.45	.45
1 1/4	2.70	.55	.65
1 1/2	3.00	.65	1.20
2	4.10	.75	2.40

Basin and Sink Gaskets

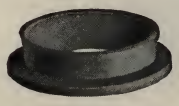
No. 1069, Basin



No. 8591, Sink

Basin ... per dozen	$.75	
Sink ... per dozen	1.60	

No. 832 Closet Spud Washers



Size ... inches	1 1/4	1 1/2	2
No. 832 ... per dozen	$1.80	2.15	2.65

Special Rubber Stoppers

No	8609	8608	8617
Size	Lav.	Bath	Sink
Per Dozen	....	....	....

Solid Rubber Stoppers

Size Inches	Price per Dozen	Size Inches	Price per Dozen
3/4	....	1 3/8	....
7/8	....	1 1/2	....
1	....	1 5/8	....
1 1/8	....	1 3/4	....
1 1/4	....	2	....

No. 245 Cast Brass Escutcheons

With Set-Screw

For Iron Pipe				For Tubing			
Size Inches	Diam. Inches	N.P. Each	C.P. Each	Size Inches	Diam. Inches	N.P. Each	C.P. Each
1/4	2 3/16	$.46	$.56	3/4	2 3/16	$.46	$.56
3/8	2 3/16	.46	.56	7/8	2 7/16	.46	.56
1/2	2 7/16	.46	.56	1	2 7/16	.46	.56
3/4	2 11/16	.46	.56	1 1/8	2 11/16	.46	.56
1	2 15/16	.54	.66	1 1/4	2 11/16	.54	.66
1 1/4	3 3/16	.54	.66	1 3/8	2 15/16	.54	.66
1 1/2	3 7/16	.54	.66	1 1/2	2 15/16	.54	.66
2	3 7/8	.58	.70	2	3 7/16	.58	.70

Spun Brass Canopy Flanges

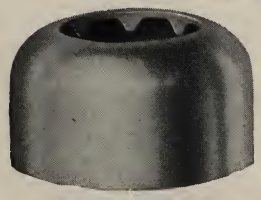
No. 631

No. 621

Chromium plated. Height 5/8 inch.

2 1/2-Inch Diameter	Each	3-Inch Diameter	Each
No. 627 for 1/4 In. I.P.S.	....	No. 1959 for 1/2 In. I.P.S.	....
No. 629 for 3/8 In. I.P.S.	....	No. 2273 for 3/4 In. I.P.S.	....
No. 630 for 1/2 In. I.P.S.	....	No. 638 for 1 In. I.P.S.	....
No. 625 for 7/16 In. O.D.	....	No. 622 for 1 1/4 In. I.P.S.	....
No. 626 for 1/2 In. O.D.	....	No. 618 for 1 In. O.D.	....
No. 627 for 9/16 In. O.D.	....	No. 619 for 1 1/4 In. O.D.	....
No. 628 for 5/8 In. O.D.	....	No. 620 for 1 3/8 In. O.D.	....
No. 631 for 3/4 In. O.D.	....	No. 621 for 1 1/2 In. O.D.	....
		No. 4238 for 1 3/4 In. O.D.	....

No. 642 Wrought Brass Flanges



Canopy Pattern—Saw Tooth

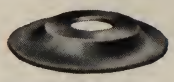
O.D. In.	I.D. In.	Depth In.	N.P. per 100	C.P. per 100
3	1 1/4	2	....	....
3	1 1/2	2	....	....
3	*1 1/4	2	....	....
3	2	2	....	....

*I.P.T.

No. 651 Closet Spud Flanges

Fits over closet spud. Spun brass, 3 1/2 inches in diameter.

For Size Spud ... inches	1 1/4	1 1/2	2
Nickel-Plated ... each	....	....	....
Chromium-Plated ... each	....	....	....



No. 649 Faucet Flanges

For Faucet Size ... inches	1/2	3/4
Finished Brass ... each	$...	...
Nickel Plated ... each	...	...
Chromium Plated ... each	...	...
Diameter ... inches	2 3/8	2 3/8
Inside Opening ... inches	7/8	1 1/8

No. 460 Cast Brass Casing 90° Elbows

Straight and Reducing With Screw or Solder Ends

Size Inches	Rough Each	Pol. or N.P. Each	C.P. Each
3/4– 7/8	$.30	$.55	$.60
1 –1 1/8	.35	.65	.70
1 1/4	.45	.80	.90
1 3/8–1 1/2	.60	1.10	1.20
2	1.00	1.80	2.00

No. 462 Cast Brass Casing 90° Elbows

Straight and Reducing With Slip Joint on One End

Size Inches	Rough Each	Pol. or N.P. Each	C.P. Each
3/4– 7/8	$.40	$.70	$.80
1 –1 1/8	.50	.90	1.00
1 1/4	.65	1.15	1.30
1 3/8–1 1/2	.80	1.45	1.60
2	1.20	2.15	2.40

No. 463 Cast Brass Casing 90° Elbows

Straight and Reducing With Slip Joint on Both Ends

Size Inches	Rough Each	Pol. or N.P. Each	C.P. Each
3/4– 7/8	$.50	$.90	$1.00
1 –1 1/8	.60	1.10	1.20
1 1/4	.80	1.45	1.60
1 3/8–1 1/2	.95	1.70	1.90
2	1.45	2.60	2.90

No. 464

Cast Brass Casing Tees

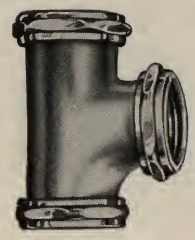
Straight and Reducing

Nos. 464 and 464A

	No. 464						No. 464A		
	Screw or Solder			With Slip Joint on One End			With Slip Joint on Two Ends		
Size Inches	Rough Each	Pol. or N.P. Each	C.P. Each	Rough Each	Pol. or N.P. Each	C.P. Each	Rough Each	Pol. or N.P. Each	C.P. Each
3/4– 7/8	$.40	$.70	$.80	$.50	$.90	$1.00	$.65	$1.15	$1.30
1 –1 1/8	.45	.80	.90	.60	1.10	1.20	.75	1.35	1.50
1 1/4	.65	1.15	1.30	.80	1.45	1.60	.95	1.70	1.90
1 3/8–1 1/2	.80	1.45	1.60	1.00	1.80	2.00	1.15	2.05	2.30
2	1.40	2.50	2.80	1.60	2.90	3.20	1.85	3.35	3.70

No. 465—With Slip Joints on Three Ends

Size Inches	Rough Each	Pol. or N.P. Each	C.P. Each
3/4– 7/8	$.75	$1.35	$1.50
1 –1 1/8	.90	1.60	1.80
1 1/4	1.10	2.00	2.20
1 3/8–1 1/2	1.35	2.45	2.70
2	2.05	3.70	4.10



No. 665 Slip Joint Brass Tees

Slip Joint All Ends

Size Inches	N.P. Each	C.P. Each
1 1/4x1 1/4x1 1/4	....	....
1 3/8x1 3/8x1 3/8	....	....
1 1/2x1 1/4x1 1/2	....	....
1 1/2x1 1/2x1 1/2	....	....
2 x2 x2	....	....

Cast Brass Casing Twin Elbows or Y's

Straight and Reducing

No. 466

Size Inches	Screw or Solder Rough Each	Screw or Solder Pol. or N.P. Each	Screw or Solder C.P. Each	With Slip Joint on One End Rough Each	With Slip Joint on One End Pol. or N.P. Each	With Slip Joint on One End C.P. Each	With Slip Joints on Two Ends with Screw on Inlet Rough Each	With Slip Joints on Two Ends with Screw on Inlet Pol. or N.P. Each	With Slip Joints on Two Ends with Screw on Inlet C.P. Each
1¼	$.80	$1.45	$1.60	$.95	$1.70	$1.90	$1.10	$2.00	$2.20
1⅜–1½	1.00	1.80	2.00	1.20	2.15	2.40	1.35	2.45	2.70
2	1.75	3.15	3.50	2.00	3.60	4.00	2.20	3.95	4.40

No. 467

With Slip Joints on Three Ends

Size Inches	Rough Each	Pol. or N.P. Each	C.P. Each
1¼	$1.25	$2.25	$2.50
1⅜–1½	1.55	2.80	3.10
2	2.45	4.40	4.90

Cast Brass Casing Crosses

Straight and Reducing

No. 468

Size Inches	Screw or Solder Rough Each	Screw or Solder Pol. or N.P. Each	Screw or Solder C.P. Each
¾– ⅞	$.45	$.80	$.90
1 –1⅛	.60	1.10	1.20
1¼	.95	1.70	1.90
1⅜–1½	1.15	2.05	2.30
2	2.00	3.60	4.00

Size Inches	With Slip Joint on One End Rough Each	With Slip Joint on One End Pol. or N.P. Each	With Slip Joint on One End C.P. Each	With Slip Joints on Two Ends Rough Each	With Slip Joints on Two Ends Pol. or N.P. Each	With Slip Joints on Two Ends C.P. Each	With Slip Joints on Three Ends Rough Each	With Slip Joints on Three Ends Pol. or N.P. Each	With Slip Joints on Three Ends C.P. Each
¾– ⅞	$.60	$1.10	$1.20	$.70	$1.25	$1.40	$.85	$1.55	$1.70
1 –1⅛	.75	1.35	1.50	.90	1.60	1.80	1.00	1.80	2.00
1¼	1.10	2.00	2.20	1.25	2.25	2.50	1.40	2.50	2.80
1⅜–1½	1.35	2.45	2.70	1.55	2.80	3.10	1.70	3.05	3.40
2	2.20	3.95	4.40	2.45	4.40	4.90	2.65	4.75	5.30

No. 469

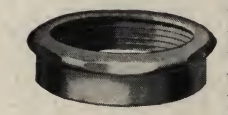
With Slip Joints on Four Ends

Size Inches	Rough Each	Pol. or N.P. Each	C.P. Each
¾– ⅞	$.95	$1.70	$1.90
1 –1⅛	1.15	2.05	2.30
1¼	1.60	2.90	3.20
1⅜–1½	1.90	3.40	3.80
2	2.90	5.20	5.80

Cast Brass Casing Blind Caps

Size.....inches	1¼	1½	2
Rough.....each	$.20	$.25	$.40
Polished or Nickel Plated.....each	.35	.45	.70
Chromium Plated.....each	.40	.50	.80

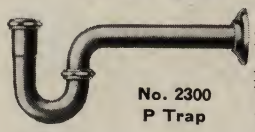
No. 514 Cast Brass Slip Joint Nuts and Washers



I.P. Size Inches	O.D. Tubing Inches	N.P. Each	C.P. Each
1¼	1¼	....	....
1¼	1⅜	....	....
1½	1¼	....	....
1½	1⅜	....	....
1½	1½	....	....
2	2	....	....

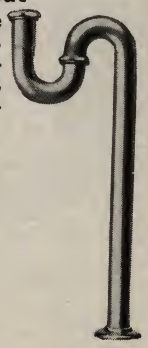
Bent Tube Adjustable Traps

Wrought Brass Without Cleanout



No. 2300
P Trap

Plain traps made of seamless wrought brass tubing. Furnished with cast brass nuts and saw-tooth flanges.



No. 2312
S Trap

No.	Trap	Outlet In.	Inlet In.	Lgth. In.	No. 20 Gage N.P. Each	No. 20 Gage C.P. Each	No. 17 Gage N.P. Each	No. 17 Gage C.P. Each
2300	P	1¼	1¼	11	....	....	....	....
2302R	P	1½	1¼	12	....	....	....	....
2302	P	1½	1½	12	....	....	....	....
2312	S	1¼	1¼	20½	....	....	....	....
2318	S	1¼	1¼	26½	....	....	....	....
2314R	S	1½	1¼	20½	....	....	....	....
2320R	S	1½	1¼	26½	....	....	....	....
2314	S	1½	1½	20½	....	....	....	....
2320	S	1½	1½	26½	....	....	....	....

Bent Tube Adjustable Traps

Wrought Brass—With Cleanout

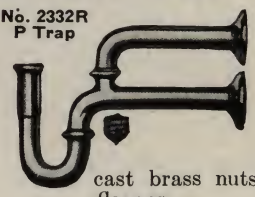
No. 2301
P Trap

Plain traps made of seamless wrought brass tubing. Furnished with cleanout, cast brass nuts, and sawtooth flanges.

No. 2313
S Trap

No.	Trap	Outlet In.	Inlet In.	Lgth. In.	No. 20 Gage N.P. Each	No. 20 Gage C.P. Each	No. 17 Gage N.P. Each	No. 17 Gage C.P. Each
2301	P	1¼	1¼	11	....	....	....	....
2303R	P	1½	1¼	12	....	....	....	....
2303	P	1½	1½	12	....	....	....	....
2313	S	1¼	1¼	20½	....	....	....	....
2319	S	1¼	1¼	26½	....	....	....	....
2315R	S	1½	1¼	20½	....	....	....	....
2321R	S	1½	1¼	26½	....	....	....	....
2315	S	1½	1½	20½	....	....	....	....
2321	S	1½	1½	26½	....	....	....	....

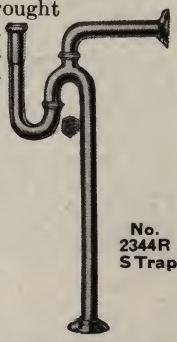
No. 2332R
P Trap



Bent Tube Adjustable Vented Traps

Without Cleanout

Chromium-plated vented trap of seamless wrought brass tubing. Furnished with cast brass nuts and saw-tooth flanges.



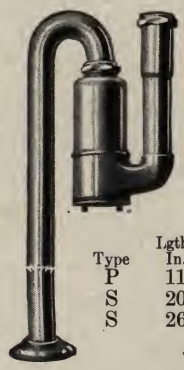
No. 2344R
S Trap

P Traps

No.	No. 20 Gage N.P., Ea.	No. 20 Gage C.P., Ea.	No. 17 Gage N.P., Ea.	No. 17 Gage C.P., Ea.	Outlet Ea. In.	Inlet In.	Lgth. In.
2332R	....	....	....	....	1½	1¼	12
2332	....	....	....	....	1½	1½	12

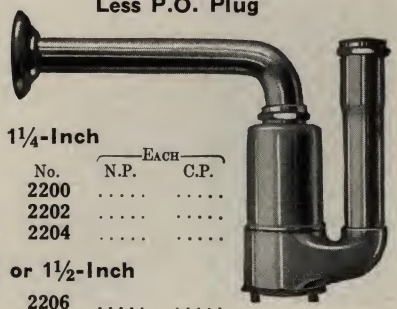
S Traps

2344R	....	....	....	....	1½	1¼	20½
2344	....	....	....	....	1½	1½	20½
2350R	....	....	....	....	1½	1¼	26½
2350	....	....	....	....	1½	1½	26½



Wrought Brass Anti-Syphon Traps

Less P.O. Plug



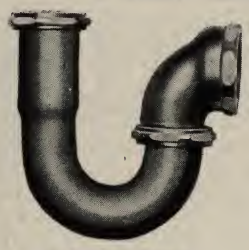
1¼-Inch

Type	Lgth. In.	No.	Each N.P.	Each C.P.
P	11	2200	.....	.....
S	20½	2202	.....	.....
S	26½	2204	.....	.....

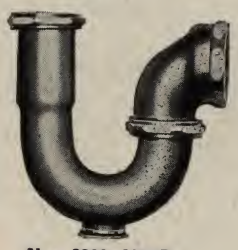
1¼ or 1½-Inch

P	11	2206	.....	.....
S	20½	2208	.....	.....
S	26½	2210	.....	.....

Bent Tube Sink P Traps



Nos. 2388, 2388R



Nos. 2389, 2389R

Bent tube inlet, cast brass iron pipe thread outlet elbow. With cast brass nuts, wrought sawtooth flanges and rubber washers.

Without Cleanout

No.	Inlet Inches	No. 20 Gage Rough N.P. Each	No. 20 Gage N.P. Each	No. 20 Gage C.P. Each	No. 17 Gage Rough N.P. Each	No. 17 Gage N.P. Each	No. 17 Gage C.P. Each
2388R	1½x1¼	....	....	....	....	....	....
2388	1½x1½	....	....	....	....	....	....
With Cleanout							
2389R	1½x1¼	....	....	....	....	....	....
2389	1½x1½	....	....	....	....	....	....

Anti-Syphon Traps

Cast Brass—Sure-Seal No. 17940 S Traps

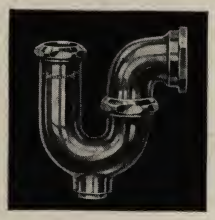
No. 17940

Sure-seal cast brass anti-syphon S trap with full I.P. size waste arm and cast brass escutcheon; no plug.

Size	in.	1½	2
No. 17940 N.P.	ea.	....	....
No. 17940 Chromium-Plated	ea.	....	....
No. 17940, Rough Brass	ea.	....	....

No. 17935 P Traps

No. 17935 N. P.	each	....
No. 17935 Chromium-Plated	each	....
No. 17935 Rough Brass	each	....



No. B-963 Cast Brass P Traps

With Cleanout

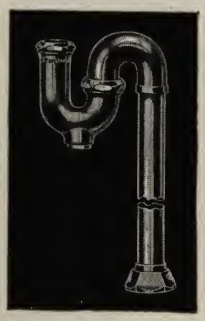
Chromard finish adjustable P trap with slip joint inlet and I.P. thread outlet.

Size Inlet	1¼	*1½
Size Outlet	1¼	1½

*With 1¼-inch inlet when specified.

No. B-964 Cast Brass Adjustable S Traps

With Cleanout



Cast brass adjustable S Trap with slip joint inlet. Outlet, 1¼, 1½ or 2 inches O.D. tubing with escutcheon.

Size Trap	1¼	*1½	†2
Size Inlet	1¼	1½	2
No. B-964, Chromard Finish	...	...	.

Traps regularly furnished with inlet same size as body.

*With 1¼-inch inlet when specified.

†With 1½-inch inlet when specified.

No. B-967 Cast Brass Bag Traps

With Cleanout

Chromard finish bag trap with slip joint inlet and I.P. thread outlet.

With 1¼-inch inlet when specified.

Size Inlet	inches	1½
Size Outlet	inches	1½

No. B-970 Cast Brass P Traps

With Cleanout

Chromard finish P trap with slip joint inlet and I.P. thread outlet.

Size Inlet	inches	1¼	*1½ †2
Size Outlet	inches	1¼	1½ 2

*With 1¼-inch inlet when specified.

†With 1½-inch inlet when specified.

No. B-973 Brass Trap Nipples

With Wall Flanges

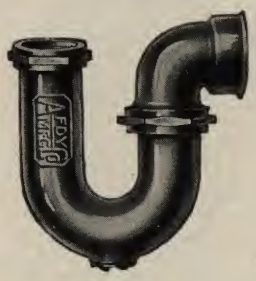
Iron pipe size brass trap nipple, 6 inches long, with cast brass wall flange.

For traps with iron pipe size outlet.

Size, I.P.	inches	1¼	1½	2
No. B-973, Nickel-Plated	each	.....	.....	.....
No. B-973, Chromard Finish	each	.....	.....	.....

No. 100-N Cast Iron Universal P Traps

With Brass Cleanout Plug—Threaded for Iron Pipe



Absolute tight joints. Universal in adjustment. Cast brass slip-joint nut and coupling nut.

Slip-joint nuts furnished same size as traps to fit waste tubes of corresponding sizes unless otherwise ordered.

Size, 1½ inch.

Can also be furnished in 2-inch size.

Can be furnished in reducing sizes when specified.

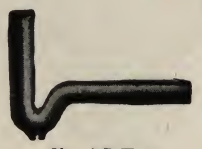
Weight 4 pounds each.

No. 100-N, Painted	each	$2.00
No. 100-N, Aluminum Painted	each	2.50
No. 100-N, Galvanized	each	2.75

Long Lead Traps

With Cleanout Plug

No. 1 S Trap



No. 4 P Trap

Size In.	Standard No. 1 S Trap Each	Standard No. 4 P Trap Each	Extra Heavy No. 1 S Trap Each	Extra Heavy No. 4 P Trap Each
1¼	$.93	$.76	$1.44	$1.14
1½	1.36	1.02	1.95	1.50
2	2.00	1.55	2.69	2.02

No. 5 Lead Drum Traps

Size In.	Price, Each Std.	Price, Each Med.	Price, Each Ex. Hy.	Size In.	Price, Each Std.	Price, Each Ex. Hy.
4x 8	$2.00	$2.15	$2.50	5x10	$3.10	$3.50
4x 9	2.12	2.28	2.60	5x11	3.25	3.65
4x10	2.20	2.37	2.73	5x12	3.40	3.80
4x11	2.28	2.47	2.85	6x10	3.65	4.25
4x12	2.35	2.55	3.00	6x11	3.85	4.45
4x14	2.65	2.85	3.40	6x12	4.00	4.70

Diamond Universal Cast Iron P Traps

No. 4072 with Slip Joint Inlet and Male Outlet

This trap is made with brass clean out screw and is threaded for iron pipe.

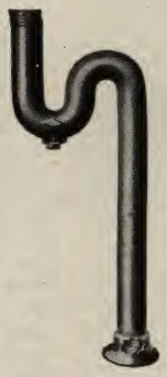
Size	inches	1¼	1½
Price, Painted	each	$1.00	$1.30
" Galvanized	"	1.40	1.80

No. 4076 with Slip Joint Inlet and Female Outlet

This trap is made with brass clean-out screw and is threaded for iron pipe.

Size	inches	1¼	1½
Price, Painted	each	$1.15	$1.45
" Galvanized	"	1.55	1.95

Diamond Cast Iron Long S Traps



These traps are two feet long over all, with the floor flange allowing an adjustment of one inch.

No. 4004 for Iron Pipe

Size	inches	1¼	1½
Painted	each	$1.50	$2.00
Galv.	each	2.25	2.90

No. 4004C With Slip Joint Nut

Size	inches	1¼	1½
Painted	each	$1.75	$2.30
Galv.	each	2.50	3.20

Cast Iron Drum Traps

No. 2

Cover is threaded for 3-inch iron pipe so that an iron pipe plug can be substituted during roughing in for testing purposes.

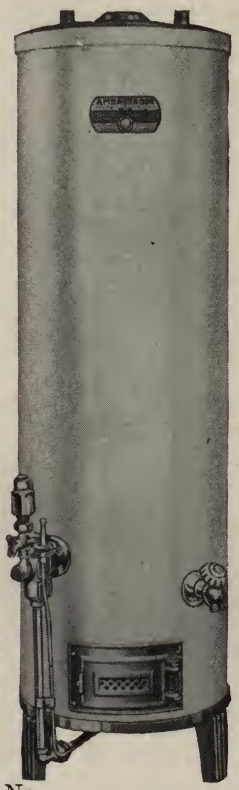
Nos. 2 and 4 are regularly tapped for 1½-inch iron pipe, but may be tapped for 2-inch pipe at same price.

No. 4

Size	inches	4x8½	4x10
Price, No. 2 Painted	each	$2.50	$2.75
" " 4 "	"	2.75	3.00

Special Bulletins

It is impossible to list in complete detail all lines of standard material, but we will gladly furnish special catalogs, bulletins and prices upon request, covering lines not fully described nor shown in this catalog.



Lawson Ambassador Automatic Storage Water Heaters

External Flue Type

25,000 BTU. Input per Hour
Recovery Capacity, 35 GPH.

Consists of a water tank enclosed in a heavy steel inner jacket, a thick mass of fiberglas insulation, and an outer-shell of heavy steel coated with baked-on enamel.

Gas flames burn beneath the full bottom of the water tank.

Products of combustion, with their intense heat, are carried out through a flue-way formed by an annular space between the tank and the inner jacket.

Insulation is packed between the inner jacket and outside shell, extending the full length of the unit.

Snap-acting thermostat.

Safety pilot control, lava pilot tip.

Boiler—double extra heavy galvanized steel.

Raised drilled port type burner made of cast iron.

Dip pipe made of heavy copper.

Cast iron dirt trap.

Drain cock with hose connection.

Furnished with infra red baked-on white enamel finish.

No.		15	20	30	40
Capacity	gallons	15	20	30	40
Diameter	inches	15	15	18	20
Height	inches	50	57	63	67
Shipping Weight	pounds	150	165	220	300

Merion Automatic Storage Gas Water Heaters

A simple and fool-proof heater which is easier to install than a range boiler. Has only one gas and two water connections to make, saving labor and fittings. All adjustments are made at the factory and permanently set.

Storage tank is extra heavy electric weld construction; body is heavy steel.

No. 0. For small apartments, barber shops, drug stores, etc.

No. 2. For the average modern home with kitchen, bath and laundry.

No. 3. For homes larger than average, or 2-apartment dwellings.

No. 4½. For homes equipped with 2 bathrooms, shower or 2 apartments with average families.

Nos. 6½ and 10. To be used where the demand for hot water is unusual—large homes with individual baths, restaurants and small apartment houses.

	Merion							
	Galv. Steel		Copper			Ht. Incl. Draft Hood	Thermostat Projects from Heater	
No.	Each	Ship. Wt. Lb.	Each	Ship. Wt. Lb.	Cap. Gal.	Inches	Width Inches	Inches
0	....	132	....	124	7½	29½	14¾	4½
2	....	250	....	225	20	53⅜	16¾	4½
3	....	287	....	260	30	57 9/16	18¾	4½
	Heaviduty Merion—Double Flue							
4½	....	493	....	442	45	65⅛	24¾	4⅞
6½	....	646	....	548	65	74⅛	26¾	6¼
10	....	977	*	...	100	73¾	32¾	8½

*Not made.

Budget Automatic Storage Water Heaters

Gas Fired

For supplying plentiful hot water, with economy and effortless operation. Heater is entirely automatic in operation, with proper controls for regulating gas supply and water temperature, and a thermostatic pilot which prevents the flow of gas unless pilot is burning.

Down draft diverter prevents either excessive draft or down drafts from affecting proper combustion.

Has single flue with ample heating surface. Steel flue baffle of spiral design assures maximum heat transfer from hot gases.

Cast iron blue flame burner of special design for economical gas burning.

Base and legs are of heavy, pressed steel construction. Strong galvanized steel tank. Snap action thermostat, with indicator to set at any desired temperature.

Heavily insulated asbestos jacket, finished in high gloss white enamel, with black trim.

No	204-S	304-S	404-S
Each	.....	.....	.....
Size ... gallons	20	30	40
Diameter ... inches	15¼	18½	18½
Height ... inches	61	59	70½
Input ... Btu.	20,000	24,000	30,000
Recovery at 60° Rise ... gph.	28.0	33.6	42.0
Shipping Weight ... pounds	166	209	240

Tapping is provided for installation of automatic gas cut-off, which is available on special order only.

Also available for burning bottled gas.

Decatur Automatic Storage Water Heaters

Gas Fired

Draft hood prevents either excessive drafts or down drafts from affecting proper combustion.

Single flue on all but No. 755-C, which has three center flues. Spiral design flue baffle is made of heavy steel plates welded together. Provides for full utilization of large heat absorbing surface of the inner flue, yet permits proper evacuation of flue products.

Tank is made of heavy strengthened copper—300 lb. test.

Cast iron condensation baffle is bolted to base of tank. If condensation occurs it is collected and revaporized.

Cast iron blue flame burner is of special design; quiet, non-backfiring and durable. Cast iron plate under burner provides air distribution to burner, and improves combustion.

Cold water intake tube is brass, tinned to prevent electrolytic action. Base and legs of cast iron; tank anchored to base and legs by anchor bolts.

Combination adjustable gas valve permits adjusting gas supply to both pilot and main burner. Snap-acting temperature control. Thermostatic pilot is the multiport, blue flame type.

Steel jacket with white baked enamel finish, black trim.

No	205-C	305-C	405-C	755-C
Each	.....	.....	.....	.....
Size ... gallons	20	30	40	75
Diameter ... inches	18⅜	22½	22½	25½
Height ... inches	62	59¾	71½	72½
Input ... Btu.	19,000	24,000	30,000	45,000
Recovery at 60° Rise ... gph.	26.6	33.6	42.0	63.0
Insulation Thickness ... inches	2	2½	2½	1
Shipping Weight ... pounds	221	270	328	583

Clipper Automatic Storage Water Heaters

Gas Fired

Has down draft diverter which prevents either excessive drafts or down drafts from affecting proper combustion.

Heavy gage, rust-resisting inner liner is constructed to afford correctly spaced outside surface of flue passage. With circumferential flues, except 60 and 75-gallon sizes, which have center flues.

Extra heavy galvanized steel tank is permanently and properly aligned to prevent shifting with respect to inner liner. Tank is carried on heavy steel supports.

Cast iron, blue flame burner is used for rapid re-heating of tank during heavy demand periods.

Cold water inlet is of tinned brass designed for maximum hot water recovery. Base and legs are of cast iron. Insulation is a 2-inch Rockwool blanket.

Combination adjustable gas valve permits adjusting gas supply to both pilot and main burner.

Snap-acting temperature control. Thermostatic pilot is the multiport, blue flame type.

Steel jacket finished in all white baked enamel, with aluminum trimmings.

No	203-S	303-S	403-S	603-S	755-S
Each	.....	.....	.....	.....	.....
Size ... gallons	20	30	40	60	75
Diameter ... inches	20⅝	20⅝	22½	25½	25½
Height ... inches	52¼	67¼	67⅞	62¼	72½
Input ... Btu.	20,000	30,000	30,000	45,000	45,000
Recovery at 60° Rise ... gph.	28.0	42.0	42.0	63.0	63.0
Shipping Weight ... lb.	260	319	365	499	568

Whitehead Automatic Gas Storage Water Heaters

Underfired Type

An automatic heater equipped with an adjustable snap action thermostat which prevents overheating; has automatic snap action safety pilot.

A 20-year written guarantee will be issued on the monel storage tank used in this heater. Monel is a technically controlled alloy, approximately two-thirds nickel and one-third copper. It is solid all the way through; cannot rust or corrode. Tank is tested to 300 pounds hydrostatic pressure.

Flue jacket is lead coated on the inside. Has heavy non-absorbent spun fiber glass insulation.

With gas filter, gas cock and pilot gas cock, non-backfire burner, one-piece cast iron base, draft hood, drain cock, and non-rusting cold water tube. Outside metal jacket finished in white enamel with black trim.

Water connection, ¾ inch I.P.S. Gas connection, ½ inch I.P.S.

When ordering state whether gas is manufactured, natural, or mixed.

Capacity ... gal.	20	30	40	50	60	75
Diameter ... in.	17	19	21	23	25	27
*Height ... in.	58	65	65	65	65	65
Flue Connection ... in.	3	3	3	4	4	4
Gas Cons. Btu. per hr.	20,000	25,000	30,000	40,000	50,000	60,000
Recovery Cap. ... gph.	28	35	42	56.0	70	84
Shipping Weight ... lb.	181	246	307	364	430	512

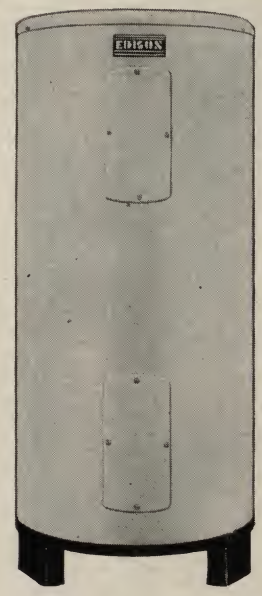
*Not including draft hood.

Prices upon application.

Edison Automatic Electric Storage Water Heaters

Round Models

150 Pounds Working Pressure
300 Pounds Test Pressure



Adaptable for the modern kitchen, bathroom, or basement.

Has strong, quick heating, immersion, twin heating unit. Mounted on brass flange type support. Permanently sealed—moisture proof.

Thermostat is accurate and thoroughly dependable. Turns the heating unit on and off as necessary to maintain the heated water at a safe, even temperature.

Tank is of heavily dipped galvanized copper bearing steel.

Insulated with high efficiency rock wool. Average thickness, 3 inches. Vermin and fire proof.

Concealed outlet box for service connections is accessibly located.

Attractively finished with durable white Calgloss finish over heavy primer coat on heavy gage steel with base of black trim.

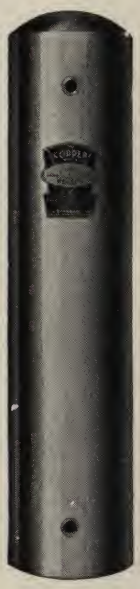
Has three, 4-inch legs. Plumbing connections, ¾-inch female.

No.	Each	Cap. Gal.	Tank Diam. Inches	Overall Diam. Inches	Floor to Cold Water Inlet Inches	Floor to Hot Water Outlet Inches	Overall (F)Ht. In.
472WG342	$85.58	30	14	20 9/16	7 15/16	41 15/16	57
472WG442	92.40	40	16	22 9/16	7 15/16	42¾	58
472WG542	99.23	52	18	24 9/16	8¼	43⅛	58
472WG642	119.18	66	20	26 9/16	7 15/16	44⅞	60
472WG842	133.35	86	22	28 9/16	7 15/16	47⅞	63

Everdur Copper Range Boilers

Horizontal and Vertical

Standard 200-Lb. Test for 85-Lb. Working Pressure
Extra Heavy 250-Lb. Test for 106-Lb. Working Pressure
Double Extra Heavy 350-Lb. Test for 148¾-Lb. Working Pressure



Everdur metal is principally copper with controlled additions of silicon and other elements.

It combines unusual resistance to corrosion, steel-like strength, and ready weldability, all of which are essential for durable water heater tanks.

These range boilers have six 1-inch tappings on sizes to 65 gallons, larger sizes have 1¼-inch tappings.

These boilers fully comply with Massachusetts law and the double extra heavy boilers meet requirements of Springfield, Massachusetts.

Standard weight boilers will be shipped unless otherwise specified.

Approx. Capacity Gallons	Standard, Extra Heavy or Double Extra Heavy Each	Diam. Inside of Shell Inches	Length of Shell Feet
25	.....	11	5
30	.....	12	5
40	.....	14	5
50	.....	16	5
65	.....	18	5
80	.....	20	5
100	.....	22	5

Monel Range Boilers

Cannot rust; resists every form of corrosion; forms no verdigris; is as clean inside as it is outside.

This boiler is also tough in structure, resistant to the ravages of ordinary wear.

It is submitted to a much higher hydrostatic pressure in the plant than it will ever meet in actual service.

Price does not include stand.

Thermostat tapping extra.

85 Pounds Actual Working Pressure
200 Pounds Test Pressure

Capacity Gallons	Each	Shipping Weight Pounds
25	$34.00	67
30	36.00	69
40	48.00	95
50	65.00	125
60	85.00	145
80	116.00	180
100	140.00	230

106 Pounds Actual Working Pressure
250 Pounds Test Pressure

25	$39.00	72
30	44.00	73
40	56.00	109
50	75.00	140
60	96.00	170
80	130.00	200
100	160.00	250

149 Pounds Actual Working Pressure
350 Pounds Test Pressure

25	$45.00	79
30	52.00	81
40	66.00	120
50	92.00	155
60	114.00	195
80	154.00	220
100	200.00	270

Stonesteel Vertical Range Boilers

A Stonesteel tank is a strong steel shell completely lined with hydraulic stone (more than ¼-inch thick). Rusting and corrosion are prevented because corrosive waters touch only the hydraulic stone lining.

Both heads are welded over shells and are made convex. This feature permits the tank to withstand greater pressure and also offers the advantage of a completely rounded interior which permits proper drainage. When mounted horizontally the ends are symmetrical.

Tanks are tested at above 350 pounds per square inch hydrostatic pressure. Lining has same coefficient of expansion as steel shell, therefore temperature changes have no ill effect.

Silicon bronze connections are welded into tank. Connections are resistant to corrosive waters. They remain leakproof. Outside finish of tank is gray enamel.

Integral stand consists of three threaded lugs welded to base of tank to receive pipe legs. Bottom outlet accessible for draining.

Furnished with six standard connections, including thermostat tapping 90° to left or right of heater connections.

Cap. Gal.	O.D. Diam. In.	O.D. Length In.	Pipe Conn. In.	Stand Leg In.	Ship. Wt. Lb.
24	12	60	1	¾	150
33	14	60	1	¾	195
28	14	48	1	¾	170
45	16	60	1	1	265
60	18	62	1	1	365
72	20	64	1	1¼	460
85	22	64	1¼	1¼	585
100	24	64	1¼	1¼	695
150	30	64	1½	1½	995

Horizontal tanks with tappings also supplied.

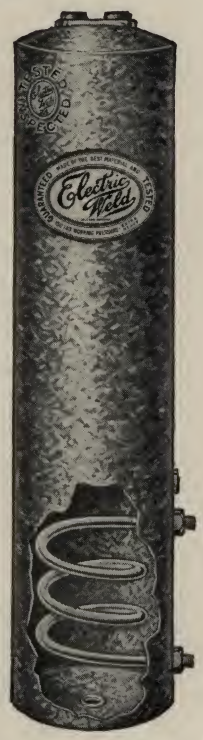
Galvanized Electric Weld New Style Range Boilers

Horizontal or Vertical

Style 318-1 Without Coil

Cap. Gal.	Each	Diam. In.	Lgth. Feet
18	$14.50	12	3
24	15.75	12	4
30	19.00	12	5
32	21.00	14	4
40	24.00	14	5
42	26.00	16	4
52	31.00	16	5
66	38.00	18	5
82	45.50	20	5
100	63.50	22	5
120	72.50	24	5
144	103.00	24	6
192	132.00	24	8

These boilers are made in standard extra heavy and double extra heavy. Standard working pressure 85 pounds. extra heavy and double extra heavy working pressure 150 pounds.



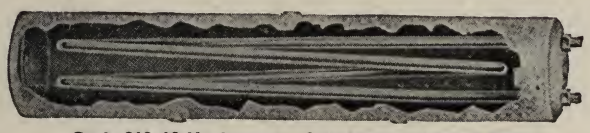
Style 318-11 With Coil

Tappings

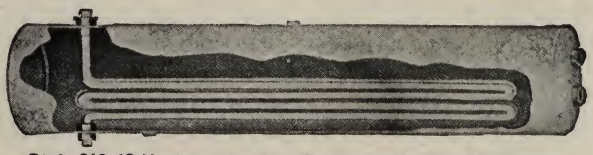
Size.....inches	1	1¼	1½	2	2½
Each.....	$1.00	1.50	2.00	3.00	4.00

Galvanized Coil Boilers

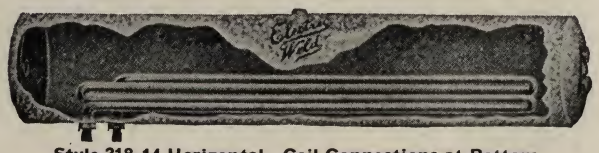
With 1-Inch Galvanized Steam Coils



Style 318-12 Horizontal—Coil Connections at End



Style 318-13 Horizontal—Coil Connections Top and Bottom



Style 318-14 Horizontal—Coil Connections at Bottom

Diam. Boiler .....in.	12	14	16	18	20	22	24
Each.....	$21.00	24.00	32.00	36.00	42.00	50.00	60.00

Copper coils can be furnished at list plus 75%.

Brass coils are furnished at double list.

To obtain the price of a boiler with coil, add the price of coil to the regular price of boiler of corresponding diameter.

No. J-48 Ideal Universal Range Boiler Stands

Fits any size or make of tank. Just screw into the bottom of any range boiler and turn the lock plate up against bottom of boiler.

No screws or bolts. Only 4 parts, all in sealed box ready to use. The 1-inch end that connects to boiler is threaded 1 inch tapered standard I.P. thread, ¾-inch long; balance of thread 1⅝ inches long, threaded 1-inch oversize straight thread for lock nut. Aluminum finish. Tee pieces galvanized. Packed 1 in a labeled carton, weight 7 pounds.

Sizes of tee pieces, ¾x½, ¾x¾, 1x¾, and 1x1 inch.

No. J-48.....each **$2.25**

No. 155 Swett Lockwood Ring Boiler Stands

Range Boiler Sizes

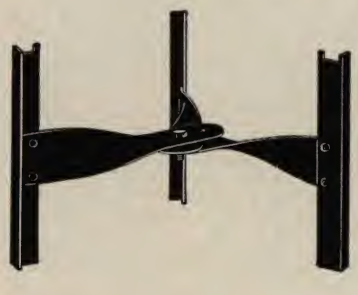
The common sizes of range boilers used are as follows:

Diam. In.	Gals.	Diam. In.	Gals.
12	18–30	20	82–98
14	24–48	22	100–120
16	42–63	24	120–192
18	53–79	..	.....

Size In.	Plain Each	Galv. Each	Max. O.D. Boiler In.	Height Stand In.	Width Yoke In.	Diam. Base In.	Weight Each Lbs.
11½	$1.25	$2.50	11½	19	11½	7½	10½
12	1.25	2.50	12⅛	19	11½	7½	12
12½	1.25	2.50	12⅝	19	11½	7½	12½
14	1.40	2.70	14⅛	19	11½	7½	13
14½	1.40	2.70	14¾	19	11½	7½	13½
16	1.75	3.25	16¼	19	11½	7½	15
18	2.50	4.75	18⅜	19	17½	12	22
20	3.00	5.50	20⅜	19	17½	12	25
22	3.50	6.50	22⅜	19	17½	12	28
24	4.00	7.50	24⅝	19	17½	12	30

Can be made 30 inches high for 40 cents each plain and 80 cents each galvanized. Each stand requires two ¼x1-inch bolts.

Rival Range Boiler Stands



Merely unfold and tighten bolt. No assembly necessary. Adjustable to fit 30 and 40-gallon tanks. Height, 9 inches.

All steel. Will not break if dropped or struck.

Rival Range Boiler Stands.....each **$.75**

Holyoke Kerosene Water Heaters

No. 105

This heater burns kerosene oil—one of the cheapest, safest and most easily obtained fuels. Requires very little care and is easily installed. Will heat water for toilet and shaving in 4 to 6 minutes, for dishwashing in 15 to 20 minutes, and for the bath in about 45 minutes. One gallon of oil is sufficient for 12 to 24 hours of operation, depending upon the height of flame. Oil reservoir holds 9 pints.

It is not necessary to install a special range boiler or storage tank. It is necessary, however, that heater be connected to a range boiler.

Shell is of cast iron and made in three parts: Front, back and cap. A cast iron plate supporting the burner is fitted to the base. Seamless copper coils make heating unusually rapid. Swing burner instantly regulated and has practically odorless combustion.

Number		85	105
Each		$25.00	29.00
Capacity	gallons	30	30–40
Height	inches	22¼	26
Floor Space Required	inches	17x19	17x19
Water Connections	inches	¾	¾
Diameter of Shell	inches	6	6
Diameter of Base	inches	8	8
Net Weight	pounds	34	36
Shipping Weight	pounds	49	52

No. N.B. 210 Holyoke Kerosene Water Heaters

This twin heater is very economical in operation. One or both burners may be used as desired. One burner, operating continuously, will give a constant supply of hot water for average use. When an extra supply of hot water is required, both burners can be lighted.

Designed to be connected to the regular range boiler.

Height, 26 inches. Size of shell, 6x12 inches. Size of base, 8x13 inches. Floor space required, 22x19 inches. Water connections, ¾ inch.

Capacity, 52 to 60 gallons.

Shipping weight, 85 pounds.

No. N.B. **210**.....each **$51.00**

Florence Oil-Burning Water Heaters

No. W1, 1-Burner
No. W2, 2-Burner

No. W1

No. W2

Supplies all the hot water needed quickly and easily and at a few cents a day.

In the one burner heater the giant 15-inch burner focuses its intense heat close-up to the preheating chamber and above this is located 20 feet of ⅝-inch copper tubing. The two-burner heater has two standard Florence burners that focus their flames directly onto 28 feet of ½-inch copper tubing.

The preheating water chambers thoroughly pre-heat the water before it enters the coils. Heaters can be hooked-up with any 20 to 40 gallon range boiler, vertical or horizontal, as an independent unit or an auxiliary to furnace or range.

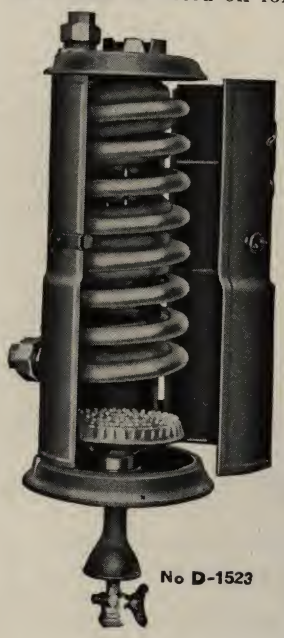
No.	Each	Dimensions, In. Width	Depth	Height	Floor Space Required In.	Ship. Wt. Lb.
W1	.....	*18	15	41½	19½x16½	47
W2	.....	17	*19½	40	20 x17	71

*Including oil tank.

Rex Double Copper Coil Water Heaters

Jackets are heavy, of cast iron construction, finished in black japan. Hinged door opens wide. The flared design keeps heat around coils. Has nickel-plated knob and spring latch.

Copper coils are made of heavy gage seamless copper tubing. They are brazed into large brass connectors, which permit quick circulation of water as it is heated. These coils are spaced right and baffled to absorb and retain the heat. Burner is of the Bunsen type, one-piece cast iron construction. Can be lifted off for cleaning. Each port is drilled and raised, allowing secondary air to mix with gas from each individual port.


No D-1523

Gas connection, ½ inch; water connection, ¾ inch; flue connection, 3 inches. Outlet connection, standard galvanized union; inlet connection, Universal Galvanized Spee Dee Union. Brass unions furnished at a small additional cost.

No.	Each	Cap. Gals.	†Input B.T.U.	†Recovery per Hr. Gals.	Coil Lgth. Ft.
*20	....	20-30	22500	31.5	13½
30-G	....	20-30	22500	31.5	13½
31-G	....	20-30	22500	31.5	13½
*46	....	30-40	25000	35.0	16¼
46-G	....	30-40	25000	35.0	16¼
*25	....	30-50	25000	35.0	17½
40-G	....	30-50	25000	35.0	17½
*26	....	30-60	25000	35.0	20⅙
50-G	....	30-60	25000	35.0	20⅙
70-G	....	30-70	27500	38.5	23

*Not equipped with unions.

†Ratings are for natural gas. They are higher when manufactured gas is used.

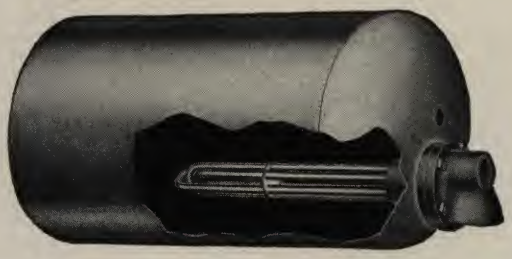
Careycel Asbestos Tank Jackets

Designed to reduce heat losses from range boilers. Made of asbestos with outside covering of natural color asbestos paper, or washable aluminum enamel, or sanitas finish. Careycel laminated asbestos construction is more efficient than the usual, ordinary corrugated air cell construction.

Furnished with asbestos cement for insulating tank top and bands for holding jacket. Packed 1 jacket per carton.

Rated Size Gal.	Each	Ht Ft.	Diam. In.	Wt. Lbs.
30	.....	5	12	28
40	.....	5	14	30
52	.....	5	16	32
66	.....	5	18	35
82	.....	5	20	47

General Heater-Tanks



General Heater-Tanks are a combination storage tank and heating unit. Hot water or steam from house heating boiler is passed through unit.

All tanks 250 pounds test, 106¼ pounds working pressure. For 300 pounds test tanks, add 5 per cent.

When installing, it is important to set tank with unit end slightly higher to insure proper venting.

Has 6 tapped openings, 2 in top, 2 in bottom, and one in each end.

Cap. Tank Gal.	Dimensions Tank, Inches Length	Diam.	*Heating Unit Size	Pipe Size Inches Boiler Conn.	6 Tank Conn.	Heating Cap. of Unit in 1 Hr. From 40° to 140° Below Water Line 212° Coal Fire	180° Oil or Gas Fire	Boiler Steam 0 Lbs. Pressure	Unit Tube Area Sq. Ft.
40	60	14	4–3	2	1½	210	105	315	5
66	60	18	4–4	2	1½	240	120	360	6
82	60	20	4–4½	2	1½	270	135	405	7
100	60	22	4–5	2	1½	300	150	450	8
120	60	24	7–3	2	1½	330	165	495	9
144	72	24	7–3½	2	1½	360	180	540	10
180	60	30	7–4	3	1½	720	360	1080	18
220	72	30	7–5	3	2	900	450	1350	23
315	72	36	7–6	3	2	1080	540	1620	28
420	96	36	7–7	3	2½	1260	630	1890	33
500	84	42	10–5	4	3	1700	850	2550	40
720	120	42	10–6½	4	3	2250	1125	3375	52
950	120	48	10–8	4	4	2800	1400	4200	65

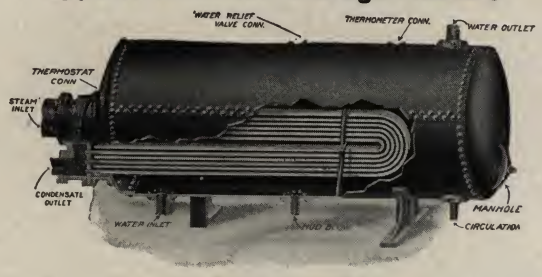
*Explanation of unit size 4–3½: The 4 is pipe size in inches of collar which fits into tank. The 3½ is length of U Tubes in feet.

Prices upon application.

Good Will and Customers

Sincerely we hope to make each transaction with you a further bond of good will between us.

Type K Whitlock Storage Heaters



Type K Shells

To be used with Type K Heating Sections. Shell prices include cradles. Manhole, 11x15 inches in tanks 30 inches in diameter and over.

No.	Capacity Gallons	Diam. and Length, In.	Thickness Shell, In.	Thickness Heads, In.	Shell Wt., Lb.
1	60	18x 60	¼	⅜	400
2	75	18x 72	¼	⅜	450
3	110	24x 60	¼	⅜	600
4	130	24x 72	¼	⅜	700
5	150	24x 84	¼	⅜	800
6	170	30x 60	¼	⅜	750
7	200	30x 72	¼	⅜	850
8	240	30x 84	¼	⅜	950
9	280	30x 96	¼	⅜	1050
10	340	36x 84	5/16	½	1300
11	400	36x 96	5/16	½	1450
12	450	36x108	5/16	½	1600
13	500	36x120	5/16	½	1800
14	530	42x 96	5/16	½	1850
15	680	42x120	5/16	½	2150
16	800	42x144	5/16	½	2500
17	970	42x168	5/16	½	2900
18	870	48x120	⅜	½	2850
19	1050	48x144	⅜	½	3250
20	1250	48x168	⅜	½	3700
21	1400	48x192	⅜	½	4100
22	1100	54x120	⅜	½	3250
23	1300	54x144	⅜	½	3700
24	1500	54x168	⅜	½	4200
25	1800	54x192	⅜	½	4700
26	1300	60x120	7/16	9/16	4300

Prices and further information on application.

Type K Heating Sections

Capacity based on heating from 40 to 180 degrees with steam at 0 pounds gauge pressure. Other temperatures and steam pressures upon application.

No.	Capacity per Hour Gallons	Max. Size Steam Pipe Inches	Smallest Shell into Which Section Will Fit, Inches	Heating Sections Wt., Lb.
H 0	100	2	18x 48	75
H 1	150	2	18x 60	80
H 2	200	2	18x 72	90
H 3	250	3½	18x 48	175
H 4	300	3½	18x 48	185
H 5	350	3½	18x 60	190
H 6	400	3½	18x 60	200
H 7	500	3½	18x 72	210
H 8	550	3½	18x 72	215
H 9	600	3½	18x 84	220
H10	700	5	24x 60	300
H11	800	3½	18x 96	260
H12	900	3½	18x108	270
H13	1000	3½	18x120	285
H14	1250	5	24x 84	370
H15	1500	5	24x108	425
H16	1750	5	24x120	450
H17	2000	6	30x 96	570
H18	2400	6	30x120	620
H19	2800	6	30x132	670
H20	3200	8	36x 96	860
H21	3600	8	36x108	920
H22	4000	8	36x120	950
H23	4400	8	36x132	1020
H24	4800	10	36x 96	1200
H25	5400	10	36x108	1300

Prices and further information on application.

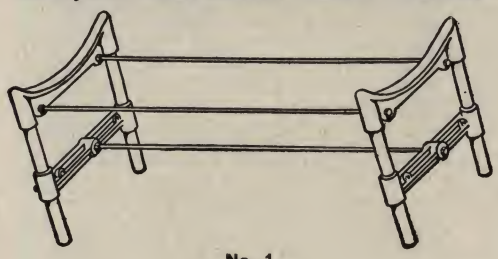
Hot Water Storage Tanks

Hot water storage tanks are of Arrow riveted and welded construction. Heavy forged steel spuds are welded in for all openings and located in accordance with Simplified Practice Recommendation No. 25, issued by the United States Department of Commerce. This allows for installation in either vertical or horizontal position.

Cap. Gals.	Size	Openings No.	Openings Size In.	Approx. Wt., Lbs. 85-Lb. Std. Work. Press.	Approx. Wt., Lbs. 127½-Lb. Ex. Hvy. Work. Press.	Cap. Gals.	Size	Openings No.	Openings Size In.	Approx. Wt., Lbs. 85-Lb. Std. Work. Press.	Approx. Wt., Lbs. 127½-Lb. Ex. Hvy Work. Press.
66	20"x 4′	7	1½	145	185	**720**	42"x10′	6	2	1200	1600
82	20"x 5′	7	1½	170	215	**865**	42"x12′	6	2	1385	1835
100	22"x 5′	7	1½	185	240	**1008**	42"x14′	6	2	1550	2150
100	24"x 4′	7	1½	175	235	**940**	48"x10′	6	3	1425	2000
118	24"x 5′	7	1½	210	275	**1130**	48"x12′	6	3	1625	2275
141	24"x 6′	7	1½	240	310	**1320**	48"x14′	6	3	1825	2625
150	30"x 4′	7	2	325	410	**1504**	48"x16′	6	3	2025	2925
183	30"x 5′	7	2	375	470	**1880**	48"x20′	6	3	2425	3475
220	30"x 6′	7	2	425	530	**2260**	48"x24′	6	3	2825	4075
250	30"x 7′	6	2	460	600	**1480**	54"x12′	6	3	2600	3100
294	30"x 8′	6	2	510	660	**1960**	54"x16′	6	3	3300	3850
372	30"x10′	6	2	600	780	**2130**	60"x14′	6	3	3400	3850
318	36"x 6′	7	2	565	700	**2425**	60"x16′	6	3	3750	4225
370	36"x 7′	6	2	615	775	**3150**	60"x21′	6	3	4700	5250
423	36"x 8′	6	2	665	845	**3520**	72"x16′	6	3	5400	6500
525	36"x10′	6	2	775	1000	**5180**	72"x24′	6	3	7375	8900
504	42"x 7′	6	2	990	1275	**6835**	72"x32′	6	3	9350	11300
575	42"x 8′	6	2	1030	1400	....	.....	.	.	....	.. .

Prices upon application.

Simplex Horizontal Tank Frames



No. 1

No. 1 frame is standard tank frame consisting of 2 saddles and 2 lower brackets of cast iron, together with three ½x48-inch tie rods and nuts.

No. 2 frame is standard tank frame for 30-inch diameter tanks or over, furnished with 2 extra diagonal rods, making 5 rods to each frame. These extra rods fit into sockets cast into brackets and cannot get out. As tie rod nuts are drawn up, they form 1 solid unit.

No. 3 is a 3-section frame. Frames from 24 to 30-inch diameter tanks are furnished with ten ½-inch rods and necessary couplings, and 36 to 48-inch diameter tanks with ten ⅝-inch rods, making these frames very rigid.

No. 4 is a multiple section frame. Any number of sections may be added making 1 continuous unit.

Nos. 1 and 2 will carry tanks up to 84 inches in length; No. 3, up to 120 inches in length; No. 4, any length, for tanks from 12 to 48 inches in diameter.

Pipe sizes for legs: For 12 to 20-inch frames, 1-inch; 22 to 30-inch frames, 1¼-inch; 36 to 42-inch frames, 1½-inch, and for 48-inch frames, 2-inch. Pipe legs not furnished, but sockets and screws for legs are furnished. There is no pipe threading required.

Each set of frames from 12 to 24-inch packed in heavy carton. Larger sizes wired together.

Size.....in.	12–20	22–24	30	36	42	48
2-Section..each	$3.50	$6.00	$7.00	$13.50	$18.00	$22.00
3-Section..each	5.50	10.00	12.00	22.00	30.00	36.00

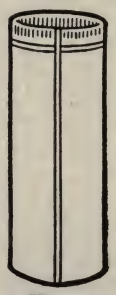
Flue Pipe and Fittings

Wilder metal is a superior coated steel sheet prepared by a special hot dipping process and by using in the alloy a combination of metals, which renders it highly resistant to heat and corrosion.

Pipe Joints

Standard length, 24 inches; also available in 30 and 36-inch lengths. Furnished in 28-gage metal, and can be furnished in 26 and 24-gage at additional charge.

Packed 25 in container; knocked down.



Pipe Diam. In.	Wilder Metal per Joint	Galvanized per Joint
3	$.30	$.22
4	.38	.26
5	.46	.32
6	.54	.38
7	.62	.42
8	.68	.46
9	.76	.50

Quarter joint, 6 inches long, ¼ price of 24-inch joint plus 2 cents per joint.

Half joint, 12 inches long, ½ price of 24-inch joint plus 2 cents per joint.

Three-quarter joint, 18 inches long, ¾ price of 24-inch joint plus 2 cents per joint.

90° Adjustable Elbows

Furnished in 28-gage metal, and can be furnished in 26 and 24-gage at additional charge. Packed 12 in a carton.

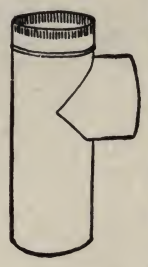
Pipe Diam. In.	Wilder Metal per Joint	Galvanized per Joint
3	$.22	$.18
4	.26	.22
5	.34	.28
6	.42	.34
7	.48	.38
8	.58	.42
9	.68	.50

45° Adjustable Angles

Prices are ⅔ those shown for 90° elbows.

Tee Joints

Furnished in 28-gage metal, and can be furnished in 26 and 24-gage at additional charge.



Pipe Diam. In.	Wilder Metal per Joint	Galvanized per Joint	Pipe Lgth. In.	Side Outlet In.	No. in Ctn.
3	$.58	$.48	24	2, 3	12
4	.68	.56	24	2, 4	12
5	.80	.64	24	2, 5	12
6	.82	.66	15	2, 6	12
7	.90	.76	15	2, 7	12
8	1.02	.84	15	2, 8	6
9	1.14	.96	15	2, 9	6

Short tees, 12 inches long, at ¾ the price for 3 to 5-inch sizes only.

Tapered tees, same as price of large end of regular tee joint plus 4 cents per joint.

Collars

For 2 to 7-inch pipe diameters. Collar o.d., 10 inches.

Packed 12 in a carton.

Wilder Metal.....each **$.16**
Galvanized.....each **.12**

Vertical Type Draft Diverters

Pipe Diam. In.	Wilder Metal Each	Galv. Each	Gage No.
3	$.74	$.64	26
4	.98	.86	26
5	1.32	1.14	26
6	1.60	1.38	26
7	2.20	1.90	26
8	3.30	2.86	24
9	4.88	4.22	24

Dampers

Pipe Diam. In.	Cast Iron Each	Sheet Metal Each	No. in Ctn.	Pipe Diam. In.	Cast Iron Each	Sheet Metal Each	No. in Ctn.
3	$.16	...	36	7	$.28	$.18	36
4	.18	...	36	8	.46	.22	24
5	.20	...	36	9	.68	.26	24
6	.22	$.16	36	.	...	...	..

Griswold New American Stove Pipe Dampers

Dampers from 3 to 12 inches inclusive are made with reversible plates. This feature provides for spindle being inserted from either side. Spindle made in one piece of solid steel, with sharp point that will pierce any stove pipe. Hump on spindle insures positive lock.

Size In.	Per Doz.	No. Doz. in Carton	Wt., Lbs. per Carton	Size In.	Per Doz.	No. Doz. in Carton	Wt., Lbs. per Carton
3	$2.60	3	12	7	$5.00	3	40
4	2.80	3	17	8	8.00	2	38
4½	3.00	3	18	9	12.00	2	48
5	3.00	3	24	10	15.00	1	34
5½	3.30	3	28	11	16.50	1	38
6	3.50	3	30	12	18.00	1	44

Draft-O-Stats

Every heating plant, whether it burns oil, coal, coke or gas requires automatic draft control for best results.

Industrial Draft-O-Stats can be used on natural draft or motor driven oil burners, hand-fired boilers, stoker and forced-draft installations, industrial gas ovens, etc.

Size Inches	Domestic Draft-o-stat Each	Domestic Draft-o-stat Weight Pounds	With Thimble Each	‡Thimble Each	Weight Complete Pounds
6	$2.40	2¼	$2.84	$.44	2¾
7	2.60	2½	3.08	.48	3
8	2.80	3½	3.36	.56	4¼
9	3.00	4	3.60	.60	5
10	3.20	4¼	4.00	.80	5½
12	4.00	6¾	5.00	1.00	8
14	5.30	11	6.50	1.20	14
16	8.30	15	9.70	1.40	23
18	10.30	19	11.90	1.60	30
20	13.20	23	15.00	1.80	34
			*Commercial		
16C	$9.80	16	$11.20	$1.40	25
18C	11.80	21	13.40	1.60	32
20C	14.70	23	16.50	1.80	36
24C	19.90	30	21.90	2.00	43
			†Industrial		
24I	$44.00	36	$60.00	**$16.00	64
30I	57.00	51	77.00	** 20.00	87
36I	69.00	65	97.00	** 28.00	115

*Without hand control, deduct $1.50.
†Without locking device, deduct $5.00.
‡Eliminates using a tee. **Breeching plate also included.

Wheeling Galvanized Plain Round Conductor Pipe

Made of 28-gage pure zinc coated sheets. The 10-foot lengths are straight, perfectly formed, true to size and gage.

Packed 250 feet per crate.

Size.....inches	2	3	4	5	6
Weight per 100 Feet .....pounds	46	64	85	105	125

Sheet Copper

Soft—Hot Rolled

Plain Flat Sheets

Size In.	Wt. Oz.	Equiv. In.	Wt. Lb. Sheet
24x96	16	.0216	16.00
30x96	14	.0189	17.50
30x96	16	.0216	20.00
30x96	18	.0243	22.50
30x96	20	.0270	25.00
30x96	24	.0323	30.00
30x96	36	.0485	45.00
30x96	48	.0647	60.00
30x120	16	.0216	25.00
36x96	16	.0216	24.00
36x96	20	.0270	30.00
36x96	24	.0323	36.00
36x96	32	.0431	48.00
36x96	36	.0485	54.00
36x120	16	.0216	30.00

Hard—Cold Rolled

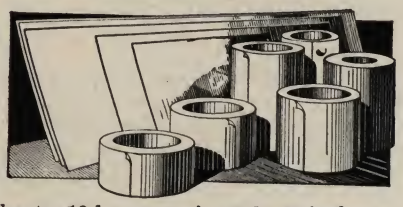
Plain—Patent Leveled

Size In.	Wt. Oz.	Equiv. In.	Wt. Lb. Sheet
24x96	16	.0216	16.00
30x96	16	.0216	20.00
30x96	20	.0270	25.00
30x96	24	.0323	30.00
30x120	16	.0216	25.00
36x96	16	.0216	24.00
36x96	20	.0270	30.00
36x96	24	.0323	36.00
36x96	32	.0431	48.00
36x120	16	.0216	30.00
36x120	20	.0270	37.50
Tinned One Side—Patent Leveled			
30x96	16	.0216	20.00
36x96	16	.0216	24.00
36x96	24	.0323	36.00

Sheet Copper Tempers for Roofing Work

Use hot rolled (soft) copper for roofing such as flat seam, standing seam, batten seam roofs, etc.; built-in or box gutters. Use cold rolled (hard) copper for all hanging gutters, downspouts, etc.

Half Hard Sheet Brass



Size of sheets, 12 by approximately 96 inches.

B. & S. Gage No.	Thick. In.	Wt. Lb. per Sq. Ft.	B. & S. Gage No.	Thick. In.	Wt. Lb. per Sq. Ft.
3/16"	.1875	8.26	20	.0320	1.41
⅛"	.1250	5.51	22	.0253	1.12
10	.1019	4.49	24	.0201	.886
14	.0641	2.82	26	.0159	.701
16	.0508	2.24	28	.0126	.555
18	.0403	1.78	30	.0100	.441

Block Tin Pipe

I.D. Inches	O.D. Inches	Wall Thick. Inches	Wt. Oz. per Ft.	I.D. Inches	O.D. Inches	Wall Thick. Inches	Wt. Oz. per Ft.
¼	.38	.065	3½	½	.82	.160	17
¼	.41	.080	4	½	1.01	.255	30
¼	.44	.095	5	⅝	.67	.0225	6
¼	.47	.110	6	⅝	.79	.0825	9
¼	.51	.130	8	⅝	.82	.0975	11
⅜	.49	.0575	4	⅝	1.01	.1925	24
⅜	.51	.0675	5	¾	.91	.080	11
⅜	.54	.0825	6	¾	1.03	.140	20
⅜	.56	.0925	7	1	1.16	.080	14
⅜	.59	.1075	8	1	1.19	.095	17
⅜	.61	.1175	8¾	1¼	1.42	.085	18
⅜	.71	.1675	14	1¼	1.48	.115	26
⅜	.76	.1925	17	1½	1.68	.090	24
½	.63	.065	6	1½	1.78	.140	36
½	.65	.075	8	2	2.16	.080	24
½	.71	.105	10	2	2.23	.115	40
½	.76	.130	12	...	....	.....	..

Lead Pipe

On Reels

Aqueduct

Classification: Eastern, E; Western, AQ.

Size I.D. In.	Outside Dia.	Weight Per Ft. Lbs.	Weight Per Ft. Oz.	Length of Coil Ft.	Size I.D. In.	Outside Dia.	Weight Per Ft. Lbs.	Weight Per Ft. Oz.	Length of Coil Ft.
3/8	.520	..	8	175	1	1.192	1	10	55
1/2	.628	..	9	140	1 1/4	1.442	2	..	50
5/8	.765	..	12	100	1 1/2	1.740	3	..	50
3/4	.906	1	..	85	2	2.185	3	..	11

Extra Light

Classification: Eastern, D; Western, XL.

3/8	.549	..	10	155	1 1/4	1.486	2	8	96
1/2	.666	..	12	235	1 1/2	1.776	3	8	74
5/8	.803	1	..	140	1 3/4	2.024	4	..	60
3/4	.940	1	4	115	2	2.284	4	12	10
1	1.232	2	..	85	...	.....	..	..	..

Light

Classification: Eastern, C; Western, L.

3/8	.577	..	12	235	1 1/4	1.528	3	..	80
1/2	.712	1	..	175	1 1/2	1.830	4	4	56
5/8	.881	1	8	100	1 3/4	2.086	5	..	48
3/4	1.006	1	12	85	2	2.354	6	..	10
1	1.284	2	8	70	...	.....	..	..	..

Medium

Classification: Eastern, B; Western, M.

3/8	.631	1	..	175	1 1/4	1.592	3	12	64
1/2	.756	1	4	140	1 1/2	1.882	5	..	48
5/8	.953	2	..	100	1 3/4	2.146	6	..	40
3/4	1.068	2	4	75	2	2.410	7	..	69
1	1.356	3	4	60	...	.....	..	..	..

Strong

Classification: Eastern, A; Western, S.

3/8	.725	1	8	120	1 1/4	1.670	4	12	100
1/2	.798	1	8	115	1 1/2	1.984	6	8	74
5/8	1.019	2	8	80	1 3/4	2.193	6	12	81
3/4	1.156	3	..	67	2	2.503	8	12	55
1	1.428	4	..	50	...	.....	..	..	...

Extra Strong

Classification: Eastern, AA; Western, XS.

3/8	.811	2	..	90	1 1/4	1.765	6	..	81
1/2	.876	2	..	100	1 1/2	2.076	8	..	61
5/8	1.082	3	..	68	1 3/4	2.404	10	8	46
3/4	1.212	3	8	74	2	2.751	13	12	35
1	1.492	4	12	50	...	.....	..	..	..

Double Extra Strong

Classification: Eastern, AAA; Western, XXS.

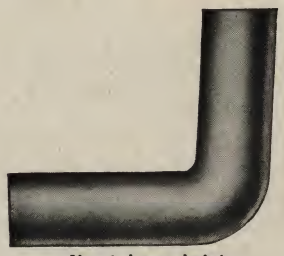
3/8	.888	2	8	70	1 1/4	1.889	7	12	63
1/2	1.012	3	..	60	1 1/2	2.272	11	4	25
5/8	1.137	3	8	50	1 3/4	2.624	14	12	33
3/4	1.336	4	12	50	2	3.008	19	8	10
1	1.596	6	..	40	...	.....	..	..	..

Lead Waste Pipe

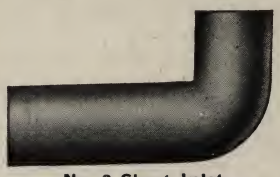
Size I.D. In.	Outside dia.	Weight Per Ft. Lbs.	Weight Per Ft. Oz.	Length of Pipe Ft.	Size I.D. In.	Outside Dia.	Weight Per Ft. Lbs.	Weight Per Ft. Oz.	Length of Pipe Ft.
2 1/2	2.75	5	..	8	4	4.50	16	6	8
	3.00	10	10	8	5	5.25	9	14	8
3	3.25	6	..	8		5.50	20	4	8
	3.50	12	8	8	6	6.25	11	13	8
4	4.25	7	14	8		6.50	24	2	8

On all sizes of lead pipe from 3/8 inch inside diameter up to and including 2 inch inside diameter, the wall thickness of grades A or Strong pipe, will safely withstand a constant, cold-water pressure of fifty pounds to the square inch; AA or Extra Strong, seventy-five pounds to the square inch, and AAA or Double Extra Strong, one hundred pounds to the square inch.

Lead Bends



No. 1 Long Inlet



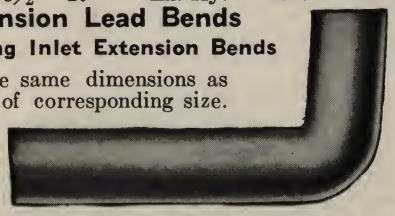
No. 2 Short Inlet

Size In.	Weight per Ft. Pounds	Center to End, In. Inlet No. 1	Inlet No. 2	Outlet Nos. 1-2	Weight	Each No. 1	Each No. 2
1 1/4	1 1/2	6	3 1/2	6	Standard	$.30	$.25
1 1/2	2 1/4	7	4	7	Standard	.50	.38
2	3 1/4	7 3/4	3 3/4	7 3/4	Standard	.78	.57
3	5	8 1/4	4 1/4	8 1/4	Standard	1.39	1.09
4	6	10	5 1/2	10	Standard	1.95	1.50
1 1/4	2	6	3 1/2	6	Medium	.41	.31
1 1/2	3	7	4	7	Medium	.66	.51
2	4	7 3/4	3 3/4	7 3/4	Medium	1.00	.69
1 1/4	2 1/2	6	3 1/2	6	Ex. Hy.	.50	.34
1 1/2	3 1/2	7	4	7	Ex. Hy.	.79	.62
2	4 1/2	7 3/4	3 3/4	7 3/4	Ex. Hy.	1.05	.80
3	6	8 1/4	4 1/4	8 1/4	Ex. Hy.	1.60	1.21
4	8	10	5 1/2	10	Ex. Hy.	2.40	1.84

Extension Lead Bends

No. 3 Long Inlet Extension Bends

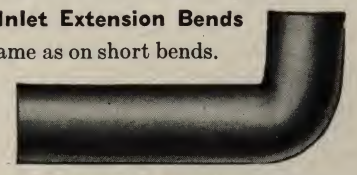
Long inlet ends are same dimensions as inlets on long bends of corresponding size.



Size Inches	Weight per Foot Pounds	Weight	Each With Outlet 12-in.	15-in.	18-in.	20-in.	*Extra In.
1 1/4	1 1/2	Standard	$.46	$.54	$.62	$.67	$.03 1/4
1 1/2	2 1/4	Standard	.67	.77	.88	.95	.04 1/2
2	3 1/4	Standard	.99	1.14	1.29	1.39	.06 1/4
3	5	Standard	1.73	1.99	2.24	2.42	.10 3/4
4	6	Standard	2.15	2.44	2.73	2.92	.12
1 1/4	2	Medium	.60	.70	.80	.87	.04 1/4
1 1/2	3	Medium	.89	1.03	1.17	1.26	.06
2	4	Medium	1.24	1.42	1.61	1.74	.07 3/4
1 1/4	2 1/2	Ex. Hy.	.70	.82	.94	1.02	.05
1 1/2	3 1/2	Ex. Hy.	1.07	1.24	1.41	1.52	.07
2	4 1/2	Ex. Hy.	1.35	1.56	1.76	1.90	.08 1/2
3	6	Ex. Hy.	1.96	2.25	2.54	2.74	.12
4	8	Ex. Hy.	2.62	2.98	3.34	3.58	.15

No. 4 Short Inlet Extension Bends

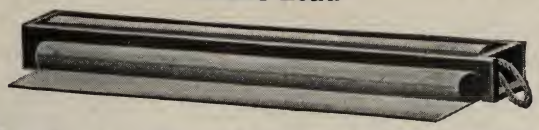
Short inlet ends are the same as on short bends.



1 1/4	1 1/2	Standard	$.40	$.47	$.55	$.60	$.03 1/4
1 1/2	2 1/4	Standard	.56	.67	.77	.84	.04 1/2
2	3 1/4	Standard	.79	.94	1.09	1.19	.06 1/4
3	5	Standard	1.39	1.65	1.90	2.07	.10 3/4
4	6	Standard	1.70	2.00	2.30	2.48	.12
1 1/4	2	Medium	.52	.62	.72	.79	.04 1/4
1 1/2	3	Medium	.75	.89	1.03	1.12	.06
2	4	Medium	.99	1.17	1.36	1.49	.07 3/4
1 1/4	2 1/2	Ex. Hy.	.60	.72	.84	.92	.05
1 1/2	3 1/2	Ex. Hy.	.90	1.07	1.24	1.35	.07
2	4 1/2	Ex. Hy.	1.08	1.28	1.49	1.63	.08 1/2
3	6	Ex. Hy.	1.57	1.87	2.16	2.35	.12
4	8	Ex. Hy.	2.09	2.45	2.81	3.04	.15

*Add per inch to list of nearest listed size for excess length.

Sheet Lead



The standard mill size for sheet lead is 8 feet wide by 20 feet long.

Shipped in rolls.

Special sizes and weights made to order.

Weights given below apply to common lead only. Other types of lead, such as antimonial or hard lead, weigh slightly less for a given thickness.

Weight Pounds per Sq. Ft.	Approx. Thickness Inches Decimal	Fraction	Weight Pounds per Sq. Ft.	Approx. Thickness Inches Decimal	Fraction
1	.0168	1/64	10	.1681	5/32
1½	.0252	3/128	12	.2017	3/16
2	.0336	1/32	14	.2353	7/32
2½	.0420	5/128	15	.2521	1/4
3	.0504	3/64	16	.2689	9/32
3½	.0588	7/128	20	.3361	11/32
4	.0672	1/16	24	.4034	13/32
5	.0840	5/64	30	.5042	1/2
6	.1008	3/32	40	.6723	11/16
8	.1345	1/8	60	1.0084	1

Lead Wool

Lead wool is used in making caulked joints on cast iron pipe and in gas and water service.

Made of lead in the form of a loosely twisted rope 5/8 inch in diameter.

Packed in 50-pound bags on mandrel, about 125 feet of rope, or on 100-pound reels, about 250 feet of rope.

Prices upon application.

Leadite

For Jointing Cast Iron Water Mains

A self-caulking substitute for pig lead. Leadite is melted and poured into the joint but requires no caulking.

One pound of Leadite is equivalent to four pounds of lead because it is so much lighter than lead.

Its use saves 50 to 75 per cent over lead.

Approximate Quantities for Making Joints Based on A.W.W.A. Standard Bell and Spigot C.I. Pipe

Nominal Diameter Pipe, In.	Material, Lbs. per Joint: Depth In.	Lead	Leadite	Nominal Diameter Pipe, In.	Material, Lbs. per Joint: Depth In.	Lead	Leadite
4	2.5	8.56	2.00	18	2.5	36.88	9.25
6	2.5	11.71	3.00	20	2.5	40.71	10.50
8	2.5	14.63	4.00	24	2.5	53.02	13.00
10	2.5	17.70	5.00	30	2.75	65.36	16.00
12	2.5	20.86	6.00	36	2·75	77.96	19.00
14	2.5	24.02	7.00	42	3.5	95.82	26.00
16	2.5	33.07	8.25	48	3.5	121.15	30.00

Pig Lead

Pigs weigh about 100 pounds.

Prices upon application.

Caulking Lead

Supplied in 5-pound bars.

Market prices.

Magnolia Anti-Friction Metal

A graphite-treated anti-friction metal. By U. S. Government test, it is anti-frictionally 300% superior to genuine babbitt.

Has withstood 16,980 pounds to square inch under controlled test. Lowest known co-efficient of friction, .001459 with water lubrication. Suggested pouring range between 825° and 900° F. Brinell 21.8.

Recommended for all steady high speed and heavy pressure including motors from 10 to 250 h.p. Not recommended for connecting rod bearings.

Packed in 28, 56, and 112-pound boxes.

Prices upon application.

Adamant Super Genuine Babbitt Metal

For Diesel, Automotive, and Airplane Bearings

A high grade tin-base babbitt. Conforms to all U. S. Government Bureau of Standards specifications for purity and quality. Free of lead and all other impurities. Extremely tough and will not crack or check in any properly constructed bearing.

By U. S. Shipping Board test, Brinell Hardness 22.8. Bar can be bent double at theoretical operating temperature of 212° F.—as a proof of toughness. Suggested pouring range between 875° and 1050° F.

For all internal combustion engines and all installations subject to extreme shock or explosion. An excellent connecting-rod material. In 28, 56, and 112-pound boxes.

Bar Tin

Per Pound..... ....

Commercial Half and Half Solder

Per Pound..... .....

Dutch Boy III Bar Solder

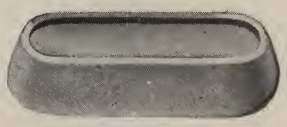
Made of new tin and new lead, carefully mixed in equal parts (50% tin and 50% lead).

It is of the highest grade and free from impurities.

Bars 7/8x13 inches, weight 1½ pounds.

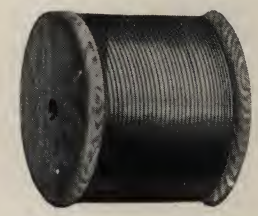
Per Pound..... .....

Wiping Solder



Wiping solder at market prices.

Wire Solder

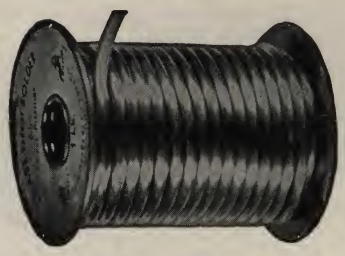


For high-grade work on tin plate, galvanized iron or sheet copper. It flows freely and evenly.

Put up on spools of approximately, 1, 5, 10, 25 and 50 pounds each.

Prices upon application.

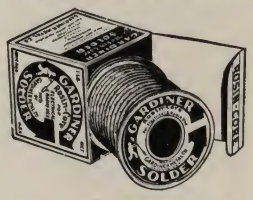
Chase Wire Solder



For use with sweat fittings. The special consists of 95 per cent tin and 5 per cent antimony. Available in 1 and 5 pound spools.

No. **3910**, Special, 1-Pound Spool.....each **$1.75**
No. **3146**, Special, 5-Pound Spool.....each **8.75**
No. **2183**, 50% Lead, 50% Tin, 1-Lb. Spool.....each **1.20**

Gardiner Rosin Core Solder



A combination solder and flux for delicate electrical and radio work. Used and recommended by manufacturers of telephone, electrical and radio equipment.

Made of quality alloy of tin and lead solder with pure rosin flux inside it, and makes absolutely non-corrosive joints. No other flux is needed nor recommended. Needs only heat. Melts quickly, flows freely, and makes high tensile strength bonds.

Put up on 1, 5 and 20-pound spools.

Gardiner Acid Core Solder

An improved self-fluxing solder. Enables experienced mechanics to do faster work and inexperienced help to do expert soldering. Always ready for instant use on all general work. Needs only heat.

Made of quality tin and lead alloy. Has quick acting flux inside. Makes clean substantial bonds on all metals except aluminum.

Put up on 1, 5 and 20-pound spools.

Ingot Lead Moulds

Bar Solder Moulds

2 Bar.....each **$2.30**
4 Bar.....each **2.40** Each..... ....

Unique Formed Flexible Wiping Cloths

The permanent curved wiping surface of the formed finishing cloths produces perfectly symmetrical joints, uniform and smoothly finished. No waste of time or no wear on cloths in breaking in. Used successfully on first joint. Solder will not stick to the smooth slick surface. Gives twice the actual service of old style shapeless wiping cloth.

Add for moleskin; Formed cloths, 10 cents; flat catch cloths, 20 cents.

Ticking, Formed Finish

Size.....in.	1¼x2½	2x2	1½x3	1¾x3	2½x2½
Each.....	$.35	.40	.40	.40	.40
Size.....in.	2½x3	3x3	3¼x3¼	3½x3½	4x4
Each.....	$.50	.50	.50	.50	.60

Ticking, Flat Catch

Size.....in.	5x5	6x6	6x7	7x8	8x8
Each.....	$.80	.90	1.00	1.20	1.30

Burnley Soldering Paste

Requires no preparation, always ready for instant use.

Size Can	Each	Size Can	Each
2-Oz.	....	5-Lb.	....
4-Oz.	....	10-Lb.	....
½-Lb.	....	50-Lb.	....
1-Lb.	....	.....	....

Nokorode Soldering Paste

This paste will flux all metals except aluminum.

It takes the place of acid in all soldering jobs. Non-corrosive, safe as resin and rapid as acid. Not affected by heat and does not spatter.

The solder will not turn dark after using this paste.

In Cartons

Size Can.....	2-Oz.	1-Lb.
Per Can.....	$.10	$.70
Per Carton.....	1.20	4.20
No. Cans in Carton.....	12	6

By Pound

Size Can.....pounds	10	25	50	100
Per Pound.....	$.50	.45	.43	.40

Nokorode Soldering Fluid

Eliminates the use of corrosive soldering acid.

Ready for instant use.

Solution is strong. May be cut with water for light work.

Size Container.....gallon	1	5	55
Per Gallon.....	$1.50	1.10	.70

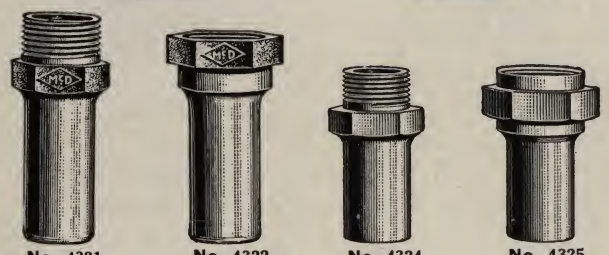
Brass Vent Tees

With Slip Joint Nuts and Washers
Iron Pipe Vent—Iron Pipe Waste

No.....	903	909	915
Regular Pattern..ea.	$1.30	1.47	1.60
Iron Pipe Conn...in.	1¼	1½	1½
Slip Joint.....in.	1¼	1½	1½

Soldering Nipples

Diamond **Standard**



No. 4321 Male — No. 4322 Female — No. 4324 Male — No. 4325 Female

Diamond

Diamond soldering nipples are made of red metal, extra heavy and extra long.

Size In.	Male Length In.	Male Wt., Ozs. per Doz.	Female Length In.	Female Wt., Ozs. per Doz.	Price per Dozen
3/8	2 11/16	28	2 1/2	30	$3.60
1/2	2 15/16	40	2 3/4	48	4.20
3/4	3 1/16	56	2 3/4	58	6.00
1	3 5/16	82	3 1/8	90	8.40
1 1/4	3 1/2	132	3 7/16	165	10.80
1 1/2	3 1/2	152	3 1/2	224	15.00
2	3 7/8	210	3 1/2	252	21.00

Standard

Size In.	Male Length In.	Male Wt., Ozs. per Doz.	Female Length In.	Female Wt., Ozs. per Doz.	Price per Dozen
3/8	2 1/4	19	2	21	$3.60
1/2	2 1/2	30	2 1/2	35	4.20
3/4	2 3/4	41	2 5/16	52	6.00
1	3	73	2 11/16	75	8.40
1 1/4	3 1/4	93	3	93	10.80
1 1/2	3 3/8	140	3 1/4	140	15.00
2	3 5/8	177	3 1/2	177	21.00

No. 730 Hexagon Male Solder Bushings

I.P. Thrd. In.	Slip O.D. In.	Each	I.P. Thrd. In.	Slip O.D. In.	Each
1 1/4	1 1/4	$.18	1 1/2	1 1/2	$.21
1 1/4	1 3/8	.18	1 1/2	1 5/8	.21
1 1/2	1 1/4	.23	2	1 1/2	.43
1 1/2	1 3/8	.23	2	2	.43

Can be furnished tapped for fine thread when specified.

Brass Ferrules

Straight — Reducing — Hub — 1/8 Bend

Standard

Straight

Size.....in.	2	3	4	4
Lgth....in.	4	3 1/2	4	4 1/2
Each.....				

Reducing

Size.....in.	2x1 1/4	2x1 1/2
Length..in.	3 1/2	3 1/2
Each.....	....	....

Extra Heavy

Straight

Size..in.	2	3	4	5	6
Lgth.in.	4	4	4 1/2	5 3/4	5 3/4
Each.....					

Reducing

Size .....in.	2x1 1/4	2x1 1/2
Length....in.	4	4
Each.....	.....	.....

New York Regulation

Size.....inches	2	3	4
Length...inches	4	4	4 3/4
Each.....			

Hub Pattern

Standard

Size.....inches	4	4
Length.....inches	4	5
Each.....		

Extra Heavy

Size.....inches	4
Length.....inches	5
Each.....	

1/8 Bend

Size.....inches	2	4
Each.....		

No. F-90 Iron Body Trap Screw Ferrules

New York regulation, brass cover with solid nut 1 inch high. Admits test plug.

Size.....in.	2	3	4	5
No. F-90, Ex. Hvy...ea.	$.72	.97	1.01	2.48
Size.....in.	6	8	10	12
No. F-90, Ex. Hvy...ea.	$3.38	7.88	12.94	19.69

Also available with countersunk plug.

No. F-70 Iron Body Trap Screw Ferrules

Short body with flanged brass cap and reduced opening. Nut 5/8 inch high.

Size.....in.	2	3	4	5
No. F-70, Std....ea.	$.38	.63	.72	1.69
Size.....in.	6	8	10	12
No. F-70, Std....ea.	$2.25	6.75	11.03	18.89

Also available with countersunk plug.

No. 174 Iron Body Cleanout Ferrules

Brass Cover with Countersunk Nut

Size In.	Standard Each	Extra Heavy Each	Size In.	Standard Each	Extra Heavy Each
2	$.74	$.96	6	$3.86	$4.40
3	.98	1.22	8	.....	9.46
4	1.14	1.38	10	.....	15.40
5	2.86	3.42	..	.....	.....

Iron Body Trap Screw Ferrules

Brass taper plug with 5/8-inch nut; 13/16 inch across flats. Reduced opening.

Size....in.	2	3	4	5	6	8	10	12
No. F-20, Std.each	$.34	.59	.63	1.58	2.03	6.53	10.80	17.89
No. F-30, Ex. Hvy. ....each	$.43	.68	.74	1.80	2.36	6.98	11.70	18.56

Also available with countersunk plug.

No. F-50 All-Brass Trap Screw Ferrules

For Extra Heavy Soil Pipe

Norfolk regulation extra heavy taper, full opening, brass cover with nut 1-inch high.

Size.....inches	2	3	4	5	6
No. F-50...each	$1.24	2.14	2.36	4.75	5.06

Also available with countersunk plug.

No. 8608 Brass Trap Screws

With Countersunk Cap

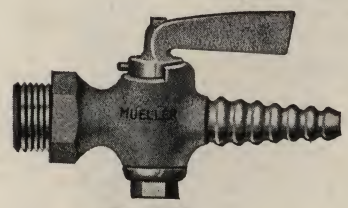
Size Inches	Finished Each	N. P. Each	C. P. Each
1	$.40	$.70	$.85
1 1/4	.50	.90	1.10
1 1/2	.55	.95	1.15
2	.95	1.60	1.90
2 1/2	1.45	2.00	2.40
3	2.00	2.80	3.35
4	2.80	3.60	4.30

No. 8600 Brass Trap Screws

Regular Pattern

Size In.	Fin. Each	N.P. Each	C.P. Each	Size In.	Fin. Each	N.P. Each	C.P. Each
1	$.40	$.70	$.85	3	$2.00	$2.80	$3.35
1 1/4	.50	.90	1.10	3 1/2	2.40	3.20	3.85
1 1/2	.55	.95	1.15	4	2.80	3.60	4.30
2	.95	1.60	1.90	5	3.60	4.80	5.75
2 1/2	1.60	2.00	2.40	6	5.60	7.20	8.65

Mueller Brass Ground Key Laboratory Stops
With Flat Lever Handle



No. 12000

Hose end has tapered corrugation for ¼ to ⅜-inch hose.

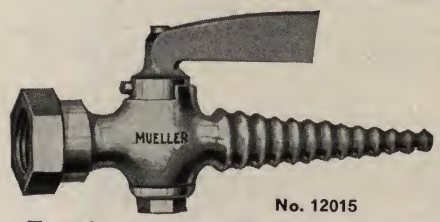
O.D. at base, 35/64 inch; at end, 19/64 inch. Outlet opening, 5/32 inch.

Tested under 80 pounds air pressure.

Specify fully when ordering.

	No. 12000, Male			No. 12005, Female		
I.P. Thread....inches	¼	⅜	½	¼	⅜	½
Rough Brass.....ea.	....	....	....	....	....	....
White N.P.....ea.	....	....	....	....	....	....
Pol. N.P.....ea.	....	....	....	....	....	....
Chromium Plated.ea.	....	....	....	....	....	....

Mueller Brass Ground Key Laboratory Stops
With Flat Lever Handle



No. 12015

Hose end, 2½ inches long; has tapered corrugation for ¼ to ⅜-inch hose.

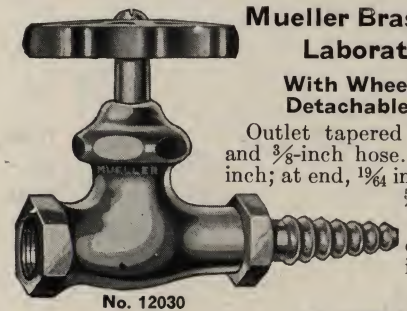
O.D. at base, 11/16 inch; at end, ¼ inch. Outlet opening, 5/32 inch.

Tested under 80 pounds air pressure.

Specify fully when ordering.

	No. 12015, Female	No. 12017, Male
I.P. Thread.....inches	⅜	⅜
Rough Brass.....ea.	....	....
White N.P.....ea.	....	....
Pol. N.P.....ea.	....	....
Chromium Plated.....ea.	....	....

Mueller Brass Compression Laboratory Stops
With Wheel Handle and Detachable Hose Nipple



No. 12030

Outlet tapered corrugation for ¼ and ⅜-inch hose. O.D. at base, 35/64 inch; at end, 19/64 inch. Outlet opening, 5/32 inch.

Hose nipple inlet on No. 12020, ¼ inch.

	No. 12020, Female		No. 12030, Male	
I-P. Thread.....inches	⅜	½	⅜	½
Rough Brass.....each	....	....	....	....
White Nickel Plated.....each	....	....	....	....
Polished Nickel Plated..each	....	....	....	....
Chromium Plated.....each	....	....	....	....

No. 12040 Mueller Brass Compression Laboratory Faucets
With Tee Handle and Detachable Hose Nipple

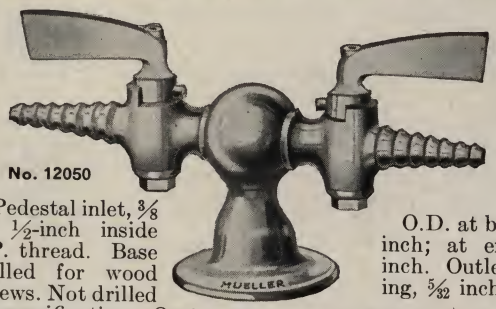
Body outlet, ¼-inch inside I.P. thread. Hose nipple inlet, ¼-inch outside I.P. thread; outlet tapered corrugation for ¼ to ⅜-inch hose.

O.D. at base, 35/64 inch; at end, 19/64 inch. Outlet opening, 5/32 inch.

Tested under 80 pounds air pressure.

I.P. Thread...in.	⅜	½
Rough Brass..ea.	....	....
White N.P....ea.	....	....
Pol. N.P.....ea.	....	....
C.P.....ea.	....	....

Mueller Brass Pedestal Laboratory Stops



No. 12050

Pedestal inlet, ⅜ or ½-inch inside I.P. thread. Base drilled for wood screws. Not drilled on specification.

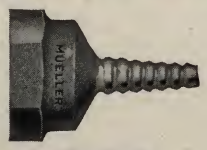
O.D. at base, 35/64 inch; at end, 19/64 inch. Outlet opening, 5/32 inch.

Outlet tapered corrugation for ¼ to ⅜-inch hose.

	No. 12050, 2-Stop Fitting		No. 12055, 1-Stop Fitting		12060, 2-Stop Fitting at Right Angles	
Size Stop.....in.	¼	⅜	¼	⅜	¼	⅜
Rough Brass.....each	....	....	....	....	....	....
White N.P.....each	....	....	....	....	....	....
Pol. N.P.....each	....	....	....	....	....	....
C.P.....each	....	....	....	....	....	....

	No. 12065, 3-Stop Fitting		No. 12070, 4-Stop Fitting	
Size Stop.....inches	¼	⅜	¼	⅜
Rough Brass.....each	....	....	....	....
White Nickel Plated.....each	....	....	....	....
Polished Nickel Plated.....each	....	....	....	....
Chromium Plated.....each	....	....	....	....

Mueller Brass Laboratory Nipples



No. 12140

No. 12145

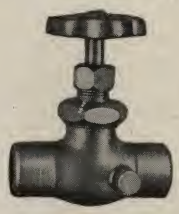
Outlet tapered corrugation for ¼ and ⅜-inch hose.

O.D. at base, 35/64 inch; at end, 19/64 inch. Outlet opening, 5/32 inch.

Tested at 80 pounds air pressure.

	No. 12140, Female			No. 12145, Male		
Inlet.....inches	¼	⅜	½	¼	⅜	½
Rough Brass.....each	....	....	....	....	....	....
White N.P.....each	....	....	....	....	....	....
Pol. N.P.....each	....	....	....	....	....	....
C.P.....each	....	....	....	....	....	....

Chase Compression Stops and Stops and Drains



Copper to Copper
No. 475, Stops

Size.....in.	⅜	½	¾	1
No. 475....each	$1.15	1.30	1.45	2.90

No. 476, Stops and Drains

Size.....in.	⅜	½	¾	1
No. 476....each	$1.20	1.35	1.50	3.05

No. 30-WKS Scott Original Compression Stops

Copper to Copper
Long Body—Wall Type

For 150 Pounds Steam Working Pressure
For 300 Pounds Cold Water Working Pressure

Brass wheel bonnet and extension on body are polished and nickel plated.

Size.....inches ½
No. 30-WKS.....each $7.80

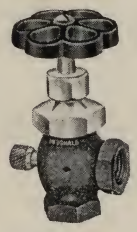
McDonald Compression Stop and Drains

No. 3511
Straight

Rough bronze stop and drain with iron wheel handle, and stuffing box.

Full size waterway.

The ½ and ⅝-inch sizes have oval wheel handle, other sizes have round wheel.



No. 3515
Angle

Size I.P.T.....inches	⅜	½	*½x¾	⅝	¾	1
No. 3511, Straight each	$1.16	1.16	....	1.30	1.76	2.70
No. 3515, Angle..each	....	$1.16	1.30	....	....	....

*With ½-inch outlet, ¾-inch inlet.

McDonald Compression Stops

No. 3513,
Straight

Rough bronze stop with iron wheel handle and stuffing box.

Full size waterway.

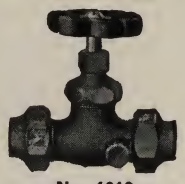
The ½ and ⅝-inch sizes have oval wheel handle, other sizes have round wheel handle.

No. 3514,
Angle

Size I.P.T.....inches	⅜	½	*½x¾	⅝	¾	1
No. 3513, Straight..each	$1.12	1.12	....	1.26	1.68	2.60
No. 3514, Angle.....each	....	$1.12	1.26	....	....	....

*With ½-inch outlet, ¾-inch inlet.

Chase Stops and Wastes for Copper Tubing



No. 1016

No. 1017

Copper to Copper

Size.....inches	⅜	½	¾	1
No. 1015, Without Stuffing Box.each	....	....	$2.20	$3.65
No. 1016, With Stuffing Box...each	$1.85	$1.90	2.30	3.80

Female I.P.S. to Copper

Size.....inches	⅜	½	¾	1
No. 1017, Without Stuffing Box.each	....	$1.85	$2.20	$3.65
No. 1018, With Stuffing Box..each	$1.85	1.90	2.30	3.80

Diamond Patent Cap Inverted Key Curb Stops and Stop and Drains

High Pressure—Round Way—Red Metal—Malleable Tee Handle—Regular Pattern—Iron Pipe

No. E3061, Stops

Size Inches	No. E3061 Stops Each	No. E3062 Stop and Drains Each
½	$2.95	$3.00
⅝	3.80	3.85
¾	4.90	4.95
1	7.40	7.50
1¼	12.05	12.20
1½	19.45	19.70
2	33.00	33.50

Red Metal Rough Ground Key Work

Tee Handle Flat Way For Iron Pipe

Stops

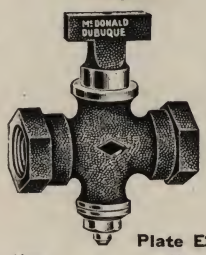


Plate E2891

Stop and Drains

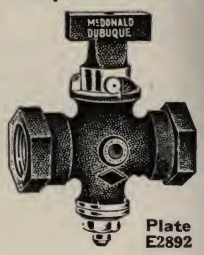


Plate E2892

Size In.	Each	Size In.	Each	Size In.	Each	Size In.	Each
¼	$1.65	1¼	$7.45	¼	$1.70	1¼	$7.60
⅜	1.70	1½	12.45	⅜	1.75	1½	12.70
½	1.75	2	21.50	½	1.80	2	22.00
⅝	2.45	2½	34.00	⅝	2.50	2½	35.00
¾	3.00	3	45.00	¾	3.05	3	46.50
1	4.40	...	.....	1	4.50	...	.....

Lever Handle—Flat Way—For Iron Pipe

Stops

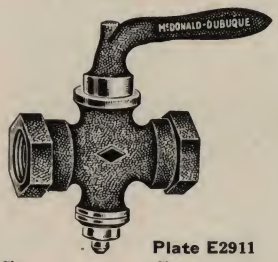


Plate E2911

Stop and Drains

Plate E2912

Size In.	Each	Size In.	Each	Size In.	Each	Size In.	Each
¼	$1.65	1	$4.40	¼	$1.70	1	$4.50
⅜	1.70	1¼	7.45	⅜	1.75	1¼	7.60
½	1.75	1½	12.45	½	1.80	1½	12.70
⅝	2.45	2	21.50	⅝	2.50	2	22.00
¾	3.00	...	.....	¾	3.05	...	.....

Tee Handle Round Way For Iron Pipe

Stops

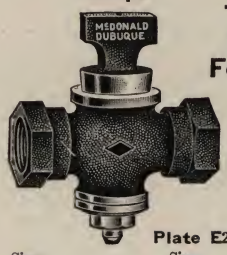


Plate E2931

Stop and Drains

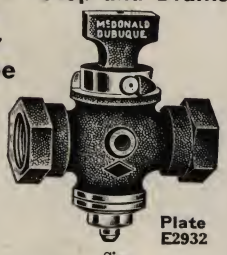


Plate E2932

Size In.	Each	Size In.	Each	Size In.	Each	Size In.	Each
½	$2.20	1¼	$10.05	½	$2.25	1¼	$10.20
⅝	3.00	1½	16.45	⅝	3.05	1½	16.70
¾	3.85	2	28.50	¾	3.90	2	29.00
1	6.15	...	.....	1	6.25	...	.....

Lever Handle—Round Way—For Iron Pipe

Stop

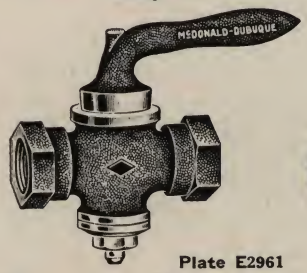


Plate E2961

Stop and Drains

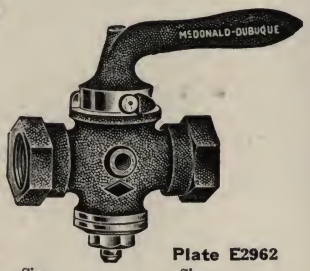


Plate E2962

Size In.	Each	Size In.	Each	Size In.	Each	Size In.	Each
½	$2.20	1¼	$10.05	½	$2.25	1¼	$10.20
⅝	3.00	1½	16.45	⅝	3.05	1½	16.70
¾	3.85	2	28.50	¾	3.90	2	29.00
1	6.15	...	.....	1	6.25	...	.....

Solid Head Hydrant Stop

Ground Key—Red Metal—For Iron Pipe

Plate E3041

Size.....inches	½	⅝	¾	1	1¼
E3041.....each	$2.15	3.05	3.75	5.40	8.65

No. E3131 Corporation Stops

Rough Red Metal—Screw Plug—Round Way—Without Coupling—For Mueller Machine

Inlet and Outlet Threaded Iron Pipe, Same Size as Body

Size....inches	½	⅝	¾	1	1¼	1½	2
Each.....	$1.45	1.95	2.50	4.00	9.25	15.00	25.00

Quarter bend couplings furnished at the same prices as eighth bend.

Hexagon plug can be furnished if desired.

Fiber gaskets furnished with all union couplings.

McDonald Extra Heavy Lead Goose Necks

Hand Wiped Joints

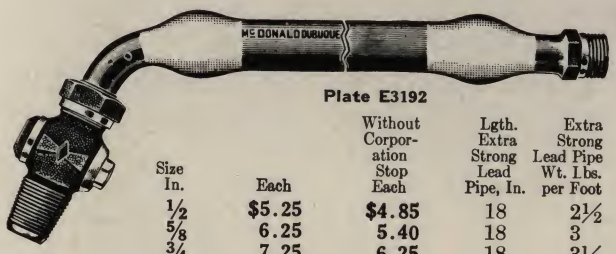


Plate E3192

Size In.	Each	Without Corporation Stop Each	Lgth. Extra Strong Lead Pipe, In.	Extra Strong Lead Pipe Wt. Lbs. per Foot
½	$5.25	$4.85	18	2½
⅝	6.25	5.40	18	3
¾	7.25	6.25	18	3½
1	10.75	9.20	18	4¾
1¼	19.50	16.20	24	6
1½	31.00	25.50	30	7½
2	48.50	38.50	36	9

Lead Flange Union Couplings

Red Metal
Lead and Inside Thread

Plate E3202

Size Inches	Price Each	Size Inches	Price Each
½	$.85	1¼	$3.80
⅝	1.30	1½	5.00
¾	1.50	2	7.50
1	2.00	...	....

Lead Flange Union Couplings

Red Metal
Lead Pipe Both Ends

Size Inches	Price Each	Size Inches	Price Each
½	$1.75	1¼	$7.50
⅝	2.50	1½	9.25
¾	2.95	2	14.25
1	3.90	...	.....

Plate E3203

No. 1000 Chase Cast Bronze Underground Service Corporation Stops

Inlet, Corporation Thread—Outlet, for Copper Tube

Size.....inches	½	⅝x¾	¾	1	1¼	1½	2
No. 1000.....each	$1.36	1.90	2.41	3.82	6.72	10.75	17.81

No. 1001 Chase Cast Bronze Underground Service Corporation Stops

Inlet, Long Iron Pipe Thread

Outlet, for Copper Tube

Size..inches	½	⅝x¾	¾	1	1¼	1½	2
No. 1001.ea.	$1.36	1.90	2.41	3.82	6.72	10.75	17.81

No. 1000-12 Chase Cast Bronze Underground Service Corporation Stops

With 45° Bend
Inlet, Corporation Thread
Outlet, For Copper Tube

Size...inches	½	⅝x¾	¾	1	1¼	1½	2
No. 1000-12 .....each	$1.90	2.54	2.96	4.62	8.77	14.66	23.65

No. 1000-13 Chase Copper Underground Service Corporation Stops

With 90° Bend
Inlet, Corporation Thread
Outlet, Copper Tube

No. inches	½	⅝x¾	¾	1	1¼	1½	2
No. 1000-13..each	$2.13	2.75	3.18	4.67	9.04	14.66	23.65

Chase Cast Bronze Underground Service Curb Stops

No. 1004S, Stop
No. 1004W, Stop with Drain

Inverted Key
Copper to Copper

Size.....inches	½	¾	1	1¼	1½	2
No. 1004S....each	$3.06	$5.10	$7.66	$11.89	$18.38	$29.65
No. 1004W....each	3.09	5.13	7.73	11.98	18.53	29.95

Chase Cast Bronze Underground Service Curb Stops

No. 1005S, Stop
No. 1005W, Stop with Drain

Inverted Key
Copper to I.P. Thread

Size.....inches	½	¾	1	1¼	1½	2
No. 1005S.....each	$2.53	$4.19	$6.32	$9.70	$15.26	$25.12
No. 1005W.....each	2.56	4.22	6.38	9.79	15.41	25.42

No. 1034-S Chase Cast Bronze Underground Service Curb Stops

Combined Cap and Tee Handle
Inverted Key

Size...inches	½	¾	1	1¼	1½	2
No. 1034-S .....each	$2.51	4.19	6.27	9.22	14.66	24.59

Chase Cast Bronze Underground Service Unions

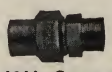
No. 1008, Copper to Copper

No. 1009, Copper to Copper With Gland

Size.....inches	½	¾	1	1¼	1½	2
No. 1008.....each	$.99	$1.23	$2.14	$3.49	$5.65	$6.99
No. 1009.....each	.74	.97	1.41	2.72	4.88	6.35

Chase Cast Bronze Underground Service Adapters

No. 1010, Copper to Inside I.P. Thread



No. 1011, Copper to Outside I.P Thread

Size.....inches	½	¾	1	1¼	1½	2
Each.....	$.66	.88	1.34	1.97	3.63	5.65

Chase Copper Tube Flared Elbows

For Underground Service

90° Elbow—Copper to Copper

Size.....inches	½	¾	1	1¼	1½	2
No. 1207...each	$.60	1.00	1.50	2.45	3.80	6.10

90° Elbow—Copper to Female S.P.S.

Size.....inches	½	¾	1	1¼	1½	2
No. 1208...each	$.60	1.00	1.50	2.45	3.80	6.10

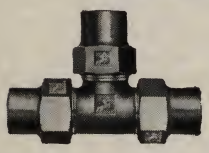
45° Elbow—Copper to Female S.P.S.

Size.....inches	½	¾	1	1¼	1½	2
No. 1208-A.each	$.60	1.00	1.50	2.45	3.80	6.10

90° Elbow—Copper to Male S.P.S.

Size.....inches	½	¾	1	1¼	1½	2
No. 1209...each	$.60	1.00	1.50	2.45	3.80	6.10

Chase Copper Tube Flared Tees

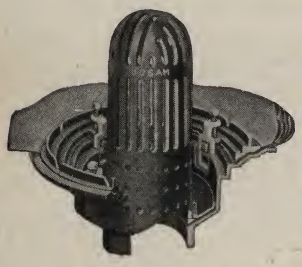


For Underground Service

Size.....inches	½	¾	1	1¼	1½	2
No. 1211, Copper to Copper to Copper.....each	$1.00	$1.35	$2.45	$4.20	$6.40	$9.90
No. 1212, Cop. to Cop. to Female S.P.S.....each	1.00	1.35	2.45	4.20	6.40	9.90
No. 1213, Cop. to Cop. to Male S.P.S.....each	1.00	1.35	2.45	4.20	6.40	9.90
No. 1214, Cop. to Female S.P.S. to Cop.....each	1.00	1.35	2.45	4.20	6.40	9.90
No. 1215, Cop. to Male S.P.S. to Cop.....each	1.00	1.35	2.45	4.20	6.40	9.90

Series 410S Josam Roof Drains

No Flashing Required



Designed to apply to either concrete or wood roof deck.

Roofing felts are joined to drain with an improved type clamping ring which has 4 adjustable bronze clamping posts with brass set screws. A watertight connection is made between roofing felts and body of drain.

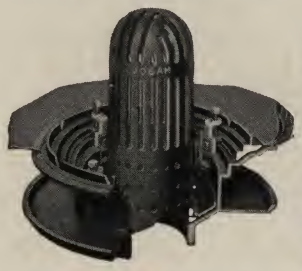
Female threaded or inside caulking outlet. Has removable combined sediment cup and dome strainer. Can be furnished with square flange. Side outlet at additional cost.

No.....	412S	413S	414S	415S	416S	418S
Outlet.....in.	2	3	4	5	6	8
Japanned....ea.	$16.00	16.00	16.00	19.50	21.50	30.00

Series 430 BS Josam Double Drainage Improved Roof Drains

With Removable Combined Dome Strainer and Sediment Cup

Designed for composition or concrete roofs. No flashing required where slab is 4 inches thick, to imbed double drainage flange in concrete.

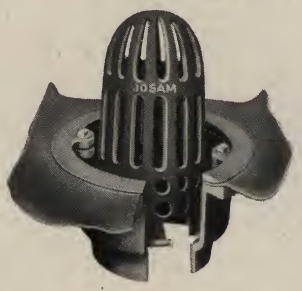


Has cast iron body and combined removable dome strainer and sediment cup. Bronze clamping posts and bolts.

No.	Outlet Inches	Each
432BS	2	$24.00
433BS	3	24.00
434BS	4	24.00
435BS	5	27.50
436BS	6	29.50
438BS	8	38.00

Series 450G Josam Improved Roof Drains

For Narrow Valleys or Gutters



Designed for narrow spaces on any kind of roof construction. Equipped with Josam adjustable clamping ring which eliminates the use of flashing. Has combined removable dome strainer and sediment cup. Furnished with side outlet, Series 450GR, or square flange, Series 450GL.

Will meet all requirements where gutter width is not less than 8 inches.

No.....	452G	453G	454G	455G
Japanned.....each	$9.00	9.00	9.00	10.00
Outlet.....inches	2	3	4	5
Weight.....pounds	13	13	13	14

Series 450GL Josam Improved Roof Drains

For Narrow Valleys or Gutters

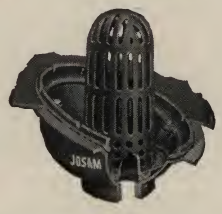
For use in gutters, valleys or other narrow spaces in roof construction. Has square top flange. Equipped with Josam adjustable clamping ring which eliminates the use of flashing. Has combined removable dome strainer and sediment cup. With 2, 3 or 4-inch tapped side outlet, $1.00 extra list.

This drain meets all requirements where gutter width is not less than 9 inches. Size of top, 9x9 inches.

Type	Outlet Inches	Each Japnd.	Each Galv.	Type	Outlet Inches	Each Japnd.	Each Galv.
452GL	2	$11.00	$13.50	454GL	4	$11.00	$13.50
453GL	3	11.00	13.50	455GL	5	12.00	14.50

Series 490GC Josam Improved Roof Drains

For Saw-Tooth Construction



Cast iron roof drain, having outlet so placed that no offset around steel bearings is required in drain line. Insures a watertight connection between roofing materials and drain body without the use of flashing. Has a round body and square flanged top; easily removable round combined dome strainer and sediment cup. Regularly furnished baked japanned body, female threaded outlet, unless otherwise ordered.

No.....	492GC	493GC	494GC	495GC	496GC
Japanned....each	$21.00	$21.00	$21.00	$26.00	$28.75
Galvanized..each	27.40	27.40	27.40	33.50	37.75
Outlet.....inches	2	3	4	5	6
Weight....pounds	38	38	38	53	54

Series 2010S Josam All Brass Balcony Drains

For Cornices, Balconies and Sills

Recommended for overhanging cornices, window sills, small balconies, etc., to prevent drip to street.

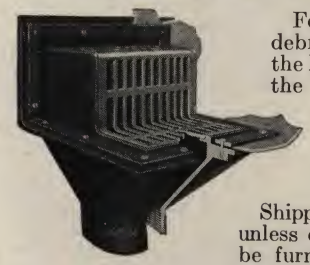
Shallow type all brass body drain with 90° or 45° female threaded outlet and nickel-plated or polished brass flat, beehive or dome strainer and collar. Collar acts as a clamping ring, holding flashing securely in place; strainer is fastened with brass screws.

White metal or chromium-plated strainer and collar, slight additional list.

Type	2012S	2013S	2014S
Each	$8.00	13.00	16.00
Outlet ... inches	2	3	4
Diameter Flange ... inches	4⅜	5¾	5¾

Series 1240 Josam Reversible Angle Roof Drains

For Any Kind of Roof Construction at Parapet Wall



For use on flat roofs. If refuse or debris fills up over the openings in the lower horizontal drainage area, the vertical and top horizontal faces will provide ample drainage area.

A clamping ring, held by brass screws holds the roofing material in place.

Shipped with threaded female outlet unless otherwise ordered. Outlet can be furnished for inside caulking or adaptor for spigot connection.

No.	1242	1243	1244	1245	1246
With Blk. C.I. Body. ea.	$65.00	65.00	65.00	65.00	65.00
Diameter Outlet ... in.	2	3	4	5	6

Series 6000 Josam Expansion Joint Connection

Can be used with any Josam drain. Body is of heavy cast iron. Constructed so as to allow expansion or contraction of 1½ inches each way in the line, or a total variance of 3 inches.

Heavy-gage brass sleeve has a smooth, non-corrosive bearing surface which works freely against a graphite-saturated, round, braided pure asbestos packing ring. Made for threaded pipe installations as shown or with hub top and spigot bottom.

No.	Size Inches	Jap. Each	No.	Size Inches	Jap. Each
6002	2	$8.00	6005	5	$14.00
6003	3	10.00	6006	6	16.00
6004	4	12.00	6008	8	23.00

Series 300C Josam Double Drainage Drains

With Clamping Ring and New Type Clamping Device for Showers, Urinals and Floors

Designed for installations where specifications call for the use of flashing material to prevent seepage caused by expansion or contraction.

Clamping device locks the flashing ring securely upon any thickness of material. Cast iron body, adjustable threaded type polished brass strainer. Polished brass finish, male or female threaded outlet, and for caulking on 2 or 3-in. outlets. Chromium or nickel-plated strainer extra. Deduct $1.00 list when clamping device is not desired.

No.	341½C	342C	353C	364C
Strainer ... inches	4	4	5	6
Outlet ... inches	1½	2	3	4
Each	$7.50	7.50	10.00	12.50

Series 300 Josam Double Drainage Floor Drains

Without Trap

For floors of marble, cement, or any composition where construction will not permit, or where it is not desirable to place trap in same. Can be used with an independent trap where construction permits.

Has a cast iron body.

Adjustable brass strainer, concave, convex, or flat.

Drain furnished with male or female threaded outlet or for slip caulked joint.

No.	341½	342	353	364
Japanned ... each	$6.50	6.50	9.00	11.50
Strainer ... inches	4	4	5	6
Outlet ... inches	1½	2	3	4

Can be furnished with clamping device at additional cost.

Series 420SP Josam Promenade Deck Drains

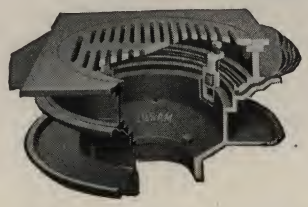
Especially designed for tile, composition or wood decks. The lower part of the drain body is the same as that of the Type 410S.

The upper part of the body can be furnished to meet various depths of roof slab so the top will set flush with the finished deck surface, but is regularly furnished with 2-inch high collar.

The top has a cast iron square frame, with a round anti-tilting grate. Can be furnished in brass, nickel-plated or polished at added cost.

No.	Each	Outlet Inches	No.	Each	Outlet Inches
422SP	$20.00	2	425SP	$24.50	5
423SP	20.00	3	426SP	27.00	6
424SP	20.00	4	428SP	36.00	8

Series 440BSP Josam Double Drainage Promenade Deck Drains



Especially designed for concrete decks. Cast iron japanned body, square frame and anti-tilting round grate. Two-inch high collar. Female threaded outlet. Outlet furnished for inside caulking or with adaptor for spigot connection when so ordered.

Double drainage flange is an insurance against leakage in the deck surface at a distance from the drain. A slab four inches or thicker is necessary to properly imbed the double drainage flange. Can be furnished in polished brass or nickel plated at extra cost.

No.	442BSP	443BSP	444BSP	445BSP	446BSP	448BSP
Each	$28.00	28.00	28.00	32.50	35.00	44.00
Outlet in.	2	3	4	5	6	8

Series 510 Josam Double Drainage Floor Drains or Cesspools

Used in basement areaways, scale and elevator pits, swimming pools, promenade roofs or decks, or with flashing device.

All cast iron. Construction of grate eliminates possibility of tilting. With female threaded outlet or slip caulked joint connections.

Japanned finish.

	With 8-Inch Grate			With 11-Inch Grate		
No.	512	513	514	524	525	526
With Iron Grate ... ea.	$7.00	7.00	7.00	13.00	13.00	13.00
With Brass Rim Grate ... ea.	$13.50	13.50	13.50	24.00	24.00	24.00
Outlet ... in.	2	3	4	4	5	6

Duriron at added cost.

Galvanized or with brass top rim and grate at extra cost.

Series 530A Josam Double Drainage Floor Drains

With Supplementary Strainer

Adaptable for use where subjected to heavy trucking and where coarse debris must be intercepted.

Extra heavy cast iron. Has female threaded or slip caulked joint outlet and anti-tilting grate.

No.....	532A	533A	534A	544A	545A	546A	548A
Japanned...ea.	$14.50	14.50	14.50	23.00	24.00	25.00	28.00
Grate.....in.	10	10	10	14	14	14	14
Outlet.....in.	2	3	4	4	5	6	8

Furnished galvanized or with brass rim and grate at additional cost. Can also be supplied with flashing ring and clamping device for $1.00 extra.

Series 560AG Josam Double Drainage Extra Heavy Floor Drains

With Removable Sediment Bucket

For large drainage facilities and waste water containing sediment.

Extra heavy cast iron body with removable sediment bucket and anti-tilting grate. Female threaded outlet. Caulked outlet same price.

				With Brass Top		
No.....	562AG	563AG	564AG	562AGB	563AGB	564AGB
Jap...ea.	$26.00	$26.00	$26.00	$37.00	$37.00	$37.00
Galv..ea.	36.50	36.50	36.50	46.50	46.50	46.00
Outlet.in.	2	3	4	2	3	4

Flashing ring and clamping device $2.00 extra.

Series 5400X Josam Non-Clog Areaway or Floor Drains

With Removable Sediment Retainer

This drain will function even after sediment container is filled, by carrying drainage off floor through holes in auxiliary frame which supports grate.

Regularly furnished cast iron body, sediment retainer, and grate. Bottom outlet for inside caulking. Can be furnished threaded outlet when so ordered.

No.....	5402X	5403X	5404X
Japanned.....each	$5.50	5.50	5.50
Outlet.....inches	2	3	4
Weight.....pounds	14	14	14

Series 5420 Josam Scale, Elevator and Ash Pit Floor Drains

With Removable Sediment Container

A non-clog triple drainage drain. Surface flow is maintained at all times and sediment is intercepted in the container. Anti-tilting grate, inside threaded bottom outlet. Grate surface, 7½ inches. Width overall, 12½ inches. Depth, 5 inches; increase 1¼-inch when furnished with inside caulking outlet; increase ½ inch when furnished with brass top. Wt. 22 lbs.

Type	Jap., Cast Iron Each	Galv., Cast Iron Each	All Brass Each	Outlet In
5422	$9.00	$12.00	$24.00	2
5423	9.00	12.00	24.00	3
5424	9.00	12.00	24.00	4

Series 5700-X Josam Non-Clog Sediment Arresting Floor Drains

With Removable Deep Type Sediment Strainer

Recommended for use in yards and roadways, garage floors, wash-racks, service driveways, industrial plants, oil refineries, boiler rooms, dairies, ash pits, laundries, coal rooms, packing plants, cold storage plants, warehouses and other heavy service requirements where efficient interception of sediment and positive protection against clogging of flow are major considerations.

Has triple drainage feature, double drainage flange and weepholes, inside caulking bottom outlet, 3, 4, 5, 6 or 8 inches. Female threaded outlet furnished when so ordered.

Also furnished with 16x16-inch square top at slight additional cost. Also various iron and brass combinations with white metal or chromium tops if desired.

	Cast Iron		Cast Iron Body Brass Top				
Type	Jap. Each	Galv. Each	Jap. Each	Galv. Each	Outlet In.	Grate Diam. In.	Wt. Lb.
5703X	$48.00	$64.50	$68.00	$82.50	3	14	164
5704X	48.00	64.50	68.00	82.50	4	14	164
5705X	50.00	66.50	70.00	84.50	5	14	164
5706X	50.00	66.50	70.00	84.50	6	14	164

No. J-115 Saaco Sand Traps

This trap prevents sand and solids from entering the drainage system, but permits liquid waste to pass freely. Trap always maintains a seal and when filled with sediment can easily be cleaned.

Recommended for garages, carriage houses, bath houses, stables and dairies.

Made for concrete floor as illustrated, or with countersunk screw holes in flange for wood floor.

Extra heavy cast iron with hub to suit 4-inch soil pipe.

No. J-115, 14x14x18 Inches.....each $12.00

For brass cleanout plug in outlet bend, add $2.00.

No. 230 Industrial Drains

Extra Heavy Double Grate Cesspool with Bell Trap

Has removable inside strainer and bell, bottom outlet, spigot end.

Furnished with outlet for 4-inch soil pipe.

Can be furnished with outlet threaded female iron pipe.

Size Top.....inches	8x8	12x12	12x12	16x16	16x16
Cast Iron.....each	$3.00	$5.00	$5.00	$7.75	$9.00
Galv. Cast Iron....each	6.00	10.00	10.00	15.00	18.00
Diameter Outlet..inches	2	3	4	4	6

No. 726 Shower Drains

Size.....in.	2x4	1½x4
No. 726, Nickel-Plated....each	....	....
No. 726, Chromium-Plated.ea.	....	.....
Ship. Weight.lbs.	¾	¾

Series 760B Josam Drains
With Sand Bucket—No Trap

Recommended where there is sediment in drain water.

Heavy cast iron rectangular box, flush hinged grate and cast iron removable sediment bucket with hand grips and bottom outlet for inside caulking. Side outlet furnished threaded hub or spigot when so ordered. Can be furnished with polished or nickel-plated brass rim and hinged grate. Chromium-plated at extra cost.

Type	Outlet In.	Japanned Each	Galv. Each
762B	2	$24.00	$33.60
763B	3	24.00	33.60
764B	4	24.00	33.60
With Brass Top			
762BB	2	$44.80	$86.40
763BB	3	44.80	86.40
764BB	4	44.80	86.40

Series 900G Josam Garage and Industrial Floor Drains
With Cleanout

For garage and industrial plant floors. Furnished with iron sand bucket and gas seal cone. Diameter of brass cleanout plug 2 inches larger than drain outlet. Grate, 14 inches Outlet, 4 inches.

No	910-G	920-G	930-G	950G
Each	$138.40	146.40	154.40	162.40
Slab ... inches	6	8	10	12
Weight ... pounds	255	280	305	355

Parts

Description	Each	Description	Each
Clamping Devise	$10.00	Bucket	$15.20
Grate	9.00	Gas Seal Cone	7.20
Hinged Grate	5.00	Brass Backwater Valve	8.00

Series 6200 Josam Oil Intercepting Garage Floor Drains
With Removable Sediment Container

Intercepts and retains oil, grease, sludge and sediment preventing entry to pipes. Cast iron body, oil retainer, gas seal cone, anti-tilting grate, trap with threaded brass cleanout flush with floor, hub outlet and hub local vent.

Type	Jap. Each	Galv. Each	Outlet In.	Grate Surface In.	*Depth In.	Wt. Lbs.
6210	$148.00	$188.50	4	10½	22	302
6220	166.50	197.00	6	10½	24	331
6230	176.50	209.50	8	10½	26	360
6240	186.50	222.00	12	10½	30	418
6250	207.50	247.00	4	14½	22	402
6260	221.00	263.50	6	14½	24	426
6270	234.00	280.00	8	14½	26	450
6280	247.50	297.00	12	14½	30	498

*Increased ½ inch when furnished with brass top.

Series 2000AC Josam Double Drainage Shower or Floor Traps and Drain
U.S. Government Type

Double drainage drain for shallow floors.

Cast iron body with adjustable polished, brass strainer. Has new type flashing ring and clamping device.

Without clamping device, deduct $1.00.

No	2042AC	2052AC	2062AC	2043AC	2053AC	2063AC
Japanned, ea.	$13.50	14.00	15.50	17.50	18.50	19.50
Strainer..in.	4½	5	6	4½	5	6
Outlet..in.	2	2	2	3	3	3

Furnished with galvanized or brass bodies at extra cost.

Extra for nickel-plated, chromium-plated, or white metal strainer.

Series 2800A Josam Double Drainage Trap and Drains
With Adjustable Double Eccentric Bushings

For porcelain shower receptors and urinals.

Combined trap and drain with adjustable double eccentric bushings, collar, and strainer, all of brass. Cast iron body.

Bushings can be adjusted to provide a variation in any direction of 1⅜ inches to meet irregularities in roughing-in connections.

No	2842A	2843A
Japanned ... each	$19.90	23.90
Strainer ... inches	4½	4½
Outlet ... inches	2	3

Series 250 ADC Josam Double Drainage Trap and Drains
Self-Cleansing Type

For showers, urinals or floors of concrete, tile, marble or any composition construction where a combined trap and drain is needed. Can be furnished with new type clamping device to bind flashing material to drain at $1.00 extra. Special self-cleansing design. Strainer and collar screw into body of drain to meet variations in floor level and thickness. Body of cast iron. Strainer and collar furnished in brass polished or nickel-plated.

No	252ADC	263ADC
Strainer ... inches	5	6
Outlet ... inches	2	3
Price ... each	$13.00	18.50

Series 750A Josam Combination Drain and Deep Seal Back Water Trap and Cleanout

Combination drain and trap, made of cast-iron, open-seal type. Has brass on brass seat, and all brass back-water valve. Valve has the same size opening as trap of drain and sewer outlet, giving full area through valve.

The trap is equipped with screw brass cleanout-plug. Cleanout-plug in each size has a diameter two inches greater than the outlet of the drain. Trap has long spigot end outlet.

No	752A	753A	754A
Each	$21.50	29.50	37.60
Size Outlet ... in.	2	3	4

Series 580S Josam Swimming Pool Main Outlet Drains
Double Drainage

Used as a main outlet for swimming pools as its large draining area permits rapid emptying.

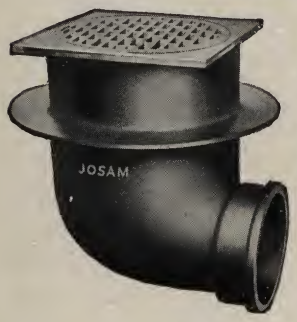
Baked japanned cast iron body with a 10-inch square frame and 8-inch square grate. Has female threaded outlet.

Caulked outlet can be furnished at the same price.

Outlet Inches	Cast Iron Type	Cast Iron Japanned Each	Cast Iron Galvanized Each	With Brass Top Type	With Brass Top Japanned Each	With Brass Top Galvanized Each
2	582S	$10.00	$14.00	582SB	$14.60	$16.80
3	583S	10.50	14.70	583SB	15.00	17.50
4	584S	11.60	16.20	584SB	16.50	19.50

Series 590M Josam Swimming Pool Main Outlet Drains

With Side Hub



Used where a side outlet and large drain area is required. Heavy cast iron body with anchor flange and side hub outlet. Has 12x12-inch square brass top, 11-inch round brass grate, assuring quick drainage. Polished finish.

White metal or chromium plated top extra.

Furnished in Everdur acid-resisting metal at extra cost.

Type	Cast Iron Black Each	Cast Iron Galv. Each	With Brass Top Black Each	With Brass Top Galv. Each	Size Inches
594M	$34.00	$48.80	$47.20	$59.40	4
595M	34.00	48.80	47.20	59.40	5
596M	34.00	48.80	47.20	59.40	6
598M	71.60	100.20	90.40	114.00	8
599M	71.60	100.20	90.40	114.00	10

Series 2200E Josam Swimming Pool Gutter Drains

Designed for use as an outlet for scum gutters, also as overflow drain.

Recommended for swimming pool scum gutters requiring narrow but efficient drainage.

Its shape conforms to the narrow course of scum gutters and is slotted, parallel to the direction of flow.

Cast brass body with polished brass strainer. Has a recessed threaded outlet.

No. 2202E, 2-Inch Outlet.....each $4.50
No. 2202½E, 2½-Inch Outlet.....each 7.00
No. 2203E, 3-Inch Outlet.....each 7.00

Series 2240H Josam Swimming Pool Inlet Outlet or Overflow Connections

For Water Supply or Circulating Lines

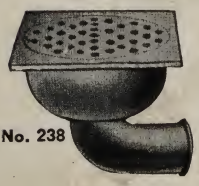
Cast iron body with flat flange, hub or female threaded outlet, polished brass round or square adjustable strainer. Body is long enough to extend through wall of pool and its flat flange acts as an anchor in the construction or to attach waterproofing membrane.

White metal, nickel or chromium-plated strainer and collar additional.

Type	2242H	2252H	2253H	2263H	2264H
Japanned Finish..each	$8.50	$9.75	$11.60	$13.50	$16.00
Galvanized Finish each	10.00	11.75	13.10	15.00	18.40
Strainer.....inches	4x4	5x5	5x5	6x6	6x6
Outlet.....inches	2	2	3	3	4

Cast Iron Side Outlet Cesspools

Extra Heavy, with Bell Trap


No. 238

No. 238 has loose strainer, No. 240, hinged strainer.

Size Top.....in.	6x6	9x9	13x13
No. 238.....each	$2.00	$3.25	$6.50
No. 240.....each	2.10	3.40	6.70
Diam. Outlet....in.	2	3	4

Series 70 Josam Area Drains

With Round Hinged Perforated Strainer

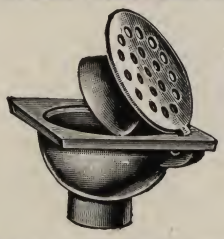
A square top drain for use in areaways, basements, stock rooms, corridors and similar locations. Drain is amply proportioned and will withstand usual truckage over same under Government specification. Spigot outlet unless otherwise ordered.

Type	Cast Iron Black Each	Cast Iron Galv. Each	Cast Iron Body Polished Brass Top Black Each	Cast Iron Body Polished Brass Top Galv. Each	Add to Polished Brass Top N.P. Each	Add to Polished Brass Top C.P. Each	Diam. Outlet In.	Diam. Top In.
72	$1.50	$3.00	$4.50	$6.00	$1.70	$2.00	2	6x6
73	3.00	6.00	8.40	11.40	2.70	3.00	3	9x9
74	6.00	12.00	16.10	22.10	3.80	4.00	4	12x12

Cast Iron and Brass Cesspools

With Bell Trap and Hinged Strainers

No. 202 With Spigot Outlet
No. 202-A With Threaded Outlet
No. 203 With Inside Caulk Outlet



Standard Cast Iron Body and Strainer

Size Top Inches	Diam. Outlet In.	Length Outlet In.	Nos. 202 and 203 Plain Strainer Each	Nos. 202 and 203 Cast Brass Strainer Each	No. 202-A Plain Strainer Each	No. 202-A Cast Brass Strainer Each
6x6	2	1¾	$.70	$1.70	$1.30	$2.30
9x9	3	2	1.45	2.95	2.25	3.75
12x12	3	1¼	2.20	6.20	3.00	7.00
12x12	4	2	2.20	6.20	3.20	7.20
13x13	4	2	2.70	6.70	3.70	7.70

Standard Cast Iron Body, Brass Top, and Strainer

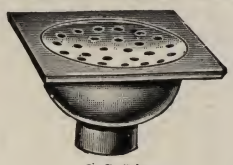
Size Top Inches	Diam. Outlet In.	Length Outlet In.	Nos. 202 and 203 Pol. Top Each	Nos. 202 and 203 N.P. Top Each	Nos. 202 and 203 C.P. Top Each	No. 202-A Pol. Top Each	No. 202-A N.P. Top Each	No. 202-A C.P. Top Each
6x6	2	1¾	$2.75	$3.95	$4.25	$3.35	$4.55	$4.85
9x9	3	2	5.25	6.85	7.65	6.05	7.65	8.45
12x12	4	2	9.50	11.50	13.10	10.50	12.50	14.10

Standard Cast Brass Body, Brass Top, and Strainer

Size Top Inches	Diam. Outlet In.	Length Outlet In.	Nos. 202 and 203 Pol. Top Each	Nos. 202 and 203 N.P. Top Each	Nos. 202 and 203 C.P. Top Each	No. 202-A Pol. Top Each	No. 202-A N.P. Top Each	No. 202-A C.P. Top Each
6x6	2	1¾	$5.00	$6.20	$6.50	$5.60	$6.80	$7.10
9x9	3	2	9.00	10.60	11.40	9.80	11.40	12.20
12x12	4	2	18.00	20.00	21.60	19.00	21.00	22.60

No. 459 Cast Iron Bell Trap Cesspools

One-Piece Bell and Strainer, Loose Cover



Size Inches	Each	O. S. Diam. Outlet Inches	Can Tap Outlet Inches	Depth Body Inches
4x 4	$.56	1¼	¾	2⅛
6x 6	.60	2	1½	2¼
8x 8	1.30	2¾	2	3¼
9x 9	1.30	3	2½	3
9x 9	1.30	4	3	3
12x12	1.90	3½	3	3¼

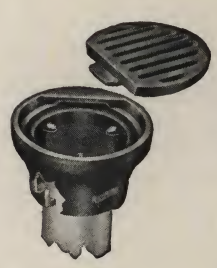
Double above prices if galvanized. Regularly furnished with plain outlet. Tapped outlet extra.

No. J26A Saaco Washington Flat Top Cesspools

No Bell Trap

Size	inches	11x11
No. J26A	each	.....
Inside Depth	inches	2 9/16
Depth of Body Overall	inches	4 1/4
Diameter of Outlet	inches	3
Outside Diameter Loose Strainer	inches	9 3/16
Weight	pounds	14 1/4

Waterid Quick Drains



Has a heavy slip lock cover. Will stand 5-ton rumbling load.

Full-size opening through body; takes plunger.

Uses up tail ends of soil pipe.

No chopping up of cement to unstop line.

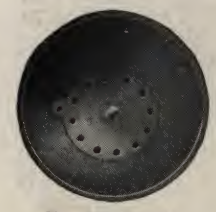
Permanently caulked to sewer.

Area of slots greater than area of soil pipe.

Takes up less floor space than cesspool.

Size	inches	2	3	4	5	6
Plain	each	$1.26	$2.28	$2.55	$3.06	$3.75
Galvanized	each	1.92	3.48	3.96	4.89	5.65
All Brass	each	4.80	9.60	12.00	15.60	20.10
All Brass N.P. Top	each	6.30	11.40	14.16	18.60	25.60

Sani-Teed Round Cast Iron Refrigerator Drains



No. 692, Loose

No. 693, Hinged

These drains are 7½ inches in diameter, 2½ inches deep and have bell trap. Tapped ¾, 1, 1¼ or 1½ inch iron pipe.

Furnished in brass, plain or polished, at extra cost.

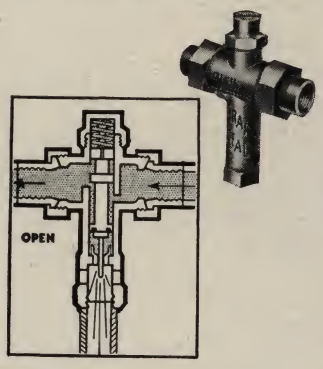
		Plain	Alum.	Galv.
No. 692, Loose Strainer	each	$.90	$1.10	$1.90
No. 693, Hinged Strainer	each	1.00	1.20	2.00

No. 150 Cast Iron Stable Cesspools

With Heavy Double Grate

Size	inches	12x12	16x16	16x16
Depth	inches	8 3/8	8½	8 3/8
Size Outlet, O.D.	inches	4 1/4	4	5
Price	each	$5.20	8.00	9.00

Phillips Automatic Trap Seal Valves



For maintaining constant water seals in the traps of floor drains and other seldom used fixtures. Prevents entry of gases and vermin from sewers. Made of cast brass.

The only moving part is a piston which is forced up by the flow of water occurring each time the fixture in the line is operated. This action opens a small aperture in the trap seal valve through which a small amount of water flows into the pipe extending to a trap.

The drain connection of the valve has an opening to the atmosphere. This eliminates a sealed connection between supply line and drain, making back siphonage impossible.

Made in ½-inch iron pipe size: Female unions on supply ends and female tapping on outlet end.

Each $7.85

Also available with ¾-inch male unions on supply ends.

Adjustable Vent Grates

Size	inches	4
Price, No. 116	each	$.50

No. 169 Swett Round Bar Grates For Soil Pipe Hubs

Diam.	in.	3	4	5	6	7	8	9
No. 169	each	$.10	.16	.18	.24	.40	.52	.72
Fits Soil Pipe	in.	2	3	4	5	6	7	8
Thickness	in.	¼	¼	¼	¼	¼	¼	¼
Weight	lbs.	¼	½	⅞	1¼	1¾	2¼	4¾

No. J32B Saaco Washington Garage Traps

Known also as Stable Vault Cesspools

		Solid or Slotted Cover	Solid Cover
Size	inches	16x16	22x22
No. J32B	each	.....	.....
Overall Height	inches	2 5/8	2 5/8
Grate	inches	13	18
Weight	pounds	32	64

Duriron Acid-Proof Drain Pipe and Fittings

Duriron is a high silicon cast metal alloy, not lined, coated or glazed. It is very hard, resists abrasion and scouring, and is of the same quality and properties throughout.

Duriron Acid-Proof Drain Pipe is installed the same as extra heavy cast iron soil pipe except pure asbestos is used for packing under the lead calking instead of hemp or oakum. It is interchangeable with extra heavy cast iron soil pipe and has the same working dimensions. It is installed as easily as extra heavy cast iron soil pipe, standard hangers are satisfactory and it is not necessary to provide drip pans or make other provisions for anticipated failure of the joints.

Duriron lines can be laid in concrete or installed in the walls without fear of leakage. Duriron is not affected by cinder concrete where the acid formed by the sulphur and moisture will ordinarily destroy iron pipe.

Duriron pipe can be painted if that is desired, but it is not necessary as the natural silvery color of Duriron blends with any color scheme.

Duriron pipe will handle acids and acid wastes with no more effect on it than pure water has on cast or wrought iron pipe.

Duriron pipe and fittings up to 3 inches are packed in wire-bound crates properly marked, making it easier to handle and keeping it free from dirt until ready for installation. Shipping weights are reduced as well.

Duriron Acid-Proof Pipe
Single-Hub Pipe

Size In.	Per Length	Per Length Ft.	Per Length In.	Wt. Lbs. per Length	Size In.	Per Length	Per Length Ft.	Per Length In.	Wt. Lbs. per Length
1½	$7.90	3	0	19	4	$34.60	5	0	91
2	14.65	4	0	30	6	58.10	5	0	135
3	25.10	5	0	56	8	105.00	5	0	230
Double-Hub Pipe									
1½	$9.45	2	9⅝	19	4	$38.85	4	9	93
2	16.55	3	9½	32	6	61.75	4	9	148
3	28.90	4	9	60	8	118.00	5	0	240

Sanitary Tee, Y and TY Branches

Size In.	Tee Branches Each	Tee Branches Weight Pounds	Y Branches Each	Y Branches Weight Pounds	TY Branches Each	TY Branches Weight Pounds
1½x1½	$4.70	9	$4.70	9	$5.50	10
2 x1½	5.20	10	6.15	10	5.65	11
2 x2	5.65	12	5.50	11	7.70	12
3 x1½	6.60	14	6.60	15	7.10	14
3 x2	7.90	15	7.10	15	8.25	15
3 x3	8.05	17	9.45	19	9.95	19
4 x1½	10.05	18	8.30	17	9.00	18
4 x2	10.25	20	8.50	20	11.05	21
4 x3	11.05	21	11.50	21	13.25	24
4 x4	12.60	24	12.60	24	16.55	33
6 x2	19.30	31	18.45	31	20.15	26
6 x3	21.80	32	23.50	32	25.20	34
6 x4	22.65	33	22.90	38	25.25	36
6 x6	26.55	42	29.30	49	33.00	60

Duriron Acid-Proof Drain Pipe Fittings

Upright Y Branches

Size Inches	Each	Weight Pounds
1½x1½	$5.85	10
2 x1½	5.85	11
2 x2	8.20	13
3 x1½	7.55	15
3 x2	8.50	16
3 x3	10.55	21
4 x1½	9.55	22
4 x2	11.75	23
4 x3	14.10	25
4 x4	17.60	27
6 x2	20.15	28
6 x3	25.20	31
6 x4	26.85	36
6 x6	33.00	46

Reducers

Size Inches	Each	Weight Pounds
2x1½	$2.35	5
3x1½	3.30	6
3x2	4.25	7
4x1½	4.25	7
4x2	4.25	8
4x3	5.20	9
5x1½	6.00	9
5x2	6.30	10
5x3	7.00	11
5x4	7.55	12
6x2	7.55	12
6x3	8.05	13
6x4	8.15	14
6x5	11.75	18
8x4	22.40	27
8x6	22.55	29

Increasers

Size Inches	Each	Weight Pounds
1½x2	$3.50	7
1½x3	4.50	8½
1½x4	5.35	10½
1½x5	7.00	11
2 x3	4.70	9
2 x4	5.65	11
2 x5	7.50	12
2 x6	8.95	15
3 x4	6.60	13
3 x4	6.60	13
3 x6	11.40	16
4 x5	11.75	16
4 x6	13.00	17½
4 x8	33.00	33
5 x6	15.10	18
6 x8	38.10	50

Quarter Bends

1½	$3.30	6
2	4.25	7
3	6.30	12
5	13.00	28
4	8.20	18
6	17.90	34
8	55.00	67

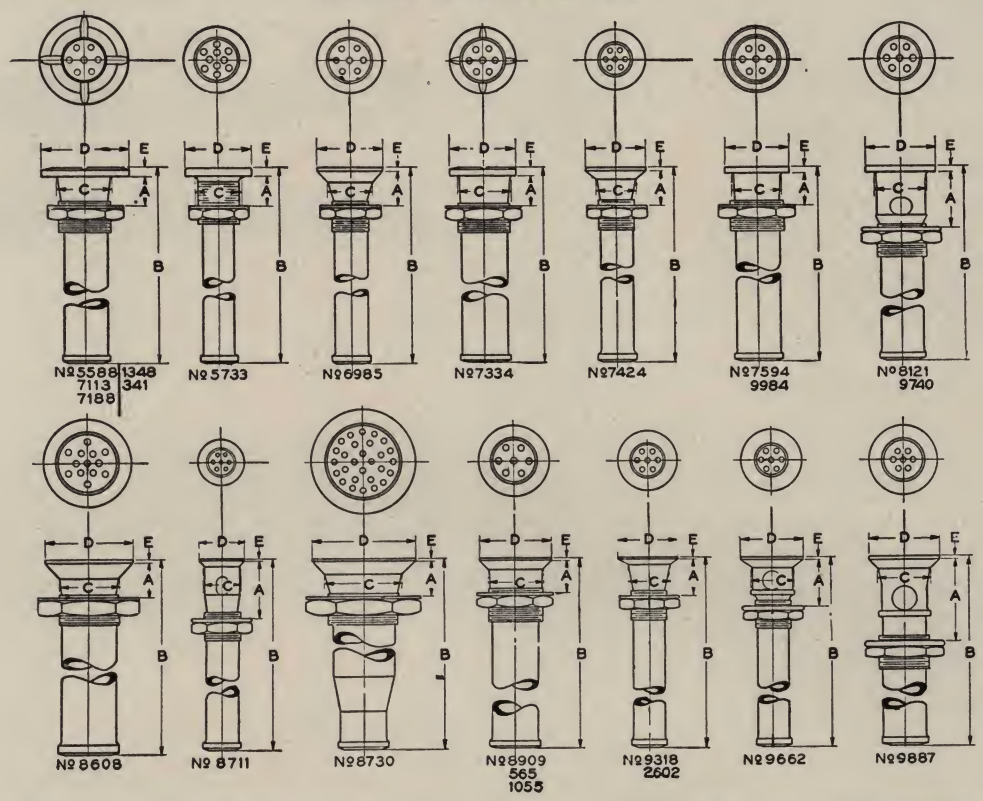
Eighth and Sixteenth Bends

Size Inches	Eighth Each	Sixteenth Each	Weight Pounds
1½	$3.30	$3.30	5
2	4.25	4.25	6
3	6.30	6.70	9
4	8.20	8.70	13
5	13.00	....	20
6	17.35	18.45	25
8	43.00	43.00	50

P Traps

Size Inches	Without Vent: Without Cleanout Each	Without Vent: With Cleanout Each	Weight Pounds	With Vent: Without Cleanout Each	With Vent: With Cleanout Each	Weight Pounds
1½	$4.50	$4.70	8	$6.10	$6.30	12
2	6.10	6.30	11	8.20	8.40	15
3	14.45	14.65	19	17.40	17.60	24
4	17.70	17.90	27	20.80	21.00	38
6	66.30	66.50	66	84.80	85.00	80
S Traps						
1½	$6.40	$6.60	10	$8.50	$8.70	13
2	8.30	8.50	14	10.55	10.75	17
3	13.90	14.10	22	16.60	16.80	28
4	19.95	20.15	33	22.45	22.65	39
6	31.70	31.90	75	35.10	35.30	81
Running Traps						
1½	$8.20	$8.40	10	$9.00	$9.20	13
2	12.00	12.20	13	12.40	12.60	16
3	16.60	16.80	21	18.25	18.45	30
4	26.65	26.85	30	28.35	28.55	43
5	33.40	33.60	60	36.20	36.40	70
6	36.75	36.95	70	40.10	40.30	80
8	119.80	120.00	155	131.80	132.00	182

Duriron Sink Strainers



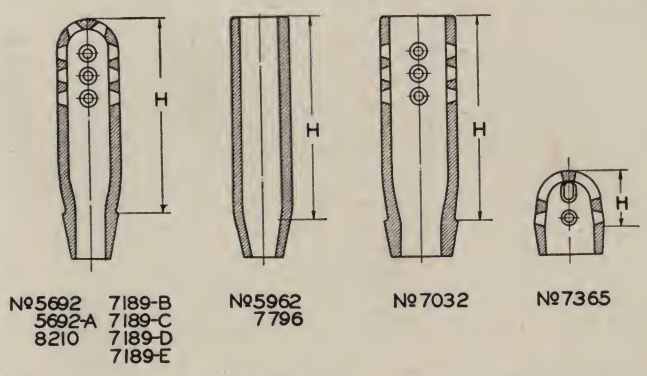
No.	Each	Size Inches	Dimensions, Inches A	B	C	D	E
5588	$10.10	1½ or 2	1 to 2	10	2½	3⅞	7/16
7113	11.20	1½ or 2	1 to 2¼	13	2½	3⅞	7/16
7188	12.10	1½ or 2	1 to 2	4⅝	2½	3⅞	⅜
1348	12.00	1	⅞ to 1¾	11¼	2	3¼	11/32
341	15.00	1	1 to 2	13	2⅜	3⅞	7/16
5733	10.10	1	¼ to 1¾	8⅝	2⅛	2 15/16	⅜
6985	10.10	1	1 to 2¼	10	2¼	2⅞	3/16
7334	10.10	1½ or 2	1 to 2	10	2½	3	7/16
7424	10.10	1	½ to 1⅛	10	1¾	2¾	3/16
7594	10.10	1½ or 2	1 to 2	10	2½	3	¼
9984	15.00	1	¼ to 1	10	1⅝	2⅛	5/16
*8121	12.50	1½ or 2	2 to 3¼	10	2½	3¼	5/16

No.	Each	Size Inches	Dimensions, Inches A	B	C	D	E
*9740	$13.50	1½ or 2	1½ to 2	10	2⅝	3¼	5/16
8608A	12.50	2	1 to 1¾	5¼	3	4	⅛
*8711	10.40	1	2 to 2¾	10	1¾	2⅛	1/16
8730	12.50	1½	1¼ to 2¼	7	3¾	4¾	⅛
8909	12.50	1½ or 2	1 to 2	10	2½	3¼	⅛
565	14.70	1½ or 2	1 to 1½	10	2½	3¼	⅛
1055	14.90	1½ or 2	½ to 1¼	12⅝	2 5/16	3	3/32
9318	12.50	1	¼ to 1⅜	10	2	2¾	1/16
2602	16.50	1½ or 2	½ to 1¼	10	2½	4¼	1/16
*9662	18.50	1	1¼ to 2¼	10	2	3	⅛
*9887	20.00	1½ or 2	2¾ to 4¼	10	2½	3¼	⅛
....	.....	.....	.....	....	...	...	..

Furnished with flat loose strainers. All except Nos. 5733, 8608, 8711, 8730 and 9662 can be furnished with Duriron stoppers at $2.00 each.

*For sink with patent overflow.

Duriron Standing Overflows

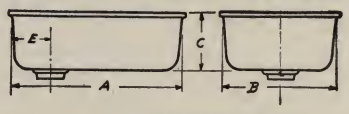


No.	Each	Outlet Diameter, Inches D	E	F	G	H Height, Inches
*8210	$5.50	1	..	..	..	4⅞
*8889	8.00	1	..	..	..	9⅞
*5692	5.50	1½ or 2	..	..	..	4¾
*5692-A	7.90	1½ or 2	..	..	..	9¼
*7189-B	7.90	1½ or 2	..	..	..	9½
*7189-C	5.50	1½ or 2	..	..	..	4
*7189-D	5.90	1½ or 2	..	..	..	6
*7189-E	6.70	1½ or 2	..	..	..	8
**7796	7.55	..	1	..	..	9 Max.
**5962	7.10	..	1½ or 2	..	..	9 Max.
**7032	7.10	..	..	1½ or 2	..	8½
*8888	....	..	..	..	1	...
*7365	4.85	..	..	..	1½ or 2	1⅜

No standing overflows can be furnished for outlets Nos. 5733, 8608A, 8711, 8730 or 9662.

*Beehive type. **Open end type.

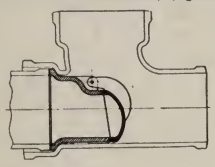
Duriron Flat Rim Sinks



No.	Each	Dimensions, Inches A	B	C	E	Weight Pounds
3885	$48.00	12	10	6	5⅜	35
5851	62.00	16	14	8	5⅜	60
5852	72.00	24	16	8	5 7/16	90
5853	80.00	28	16	8	5 7/16	110
5964	58.00	17	9	10½	8½	73
7924	66.00	14	10½	9	5⅜	50
7925	70.00	16	12	9	5⅜	62
8142	61.00	15¼	7¼	7½	7⅝	42
9457	75.00	18	10	6	4	52

Duriron Sink Outlet, No. 5588, included in above prices. Dimensions are outside of sink under rim. Rim width, ½-inch; thickness, ⅝-inch. Other size sinks made to order.

Duriron Backwater Valves



Palmer Type

Price does not include tee.

Size.....inches	3	4	6	8
Each.....	$25.00	47.00	89.00	98.00

Duriron Floor Drains

Double Drainage Type

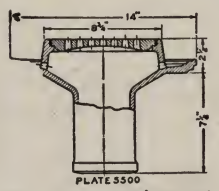


PLATE 5500

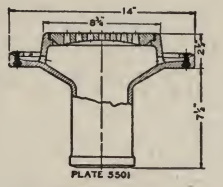


PLATE 5501

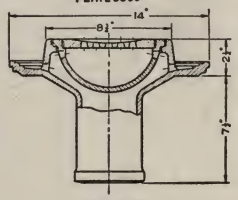


PLATE 5687

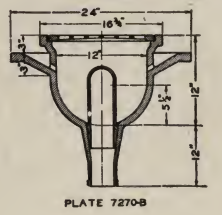


PLATE 7270-B

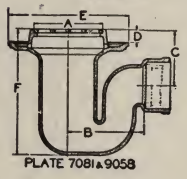


PLATE 7081▲9058

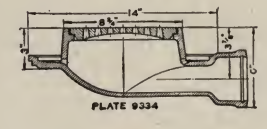


PLATE 9334

No.	With Strainer Each	Extra Strainer Each	Size Outlet Inches	Dimensions, Inches A	B	C	D	E	F	Wt. Lbs.
*5500	$42.00	$6.00	2-3-4-6	..	...	...	...	...	....	40
**5501	45.00	6.00	2-3-4-6	..	...	...	...	...	....	40
*7081-A	40.00	3.60	1½	4	6½	3⅞	1½	10⅜	9	30
*7081-B	40.00	3.60	2	4	6½	3⅝	1½	10⅜	9	32
*9058-3	85.00	6.00	3	8	9	5⅞	1½	14	14½	75
*9058-4	85.00	6.00	4	8	9	6⅜	1½	14	14½	79
*5687	65.00	5.00	2-3-4-6	..	...	...	...	...	....	72
**5687-A	60.00	5.00	2-3-4-6	..	...	...	...	...	....	75
*9334	58.00	6.00	2	..	...	...	...	...	....	37

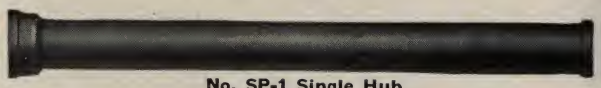
Floor drains are furnished with strainer plates of Durimet, a high nickel-chromium low carbon acid-resisting stainless steel. Duriron strainer plates can be furnished if specified on order.

*Without flashing ring.

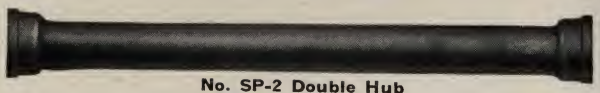
**With flashing ring.

Cast Iron Soil Pipe

5-Foot Lengths



No. SP-1 Single Hub



No. SP-2 Double Hub

Size Inches	No. SP-1 Single Hub Standard Per Foot	Medium Per Foot	Extra Heavy Per Foot	No. SP-2 Double Hub Standard Per Foot	Medium Per Foot	Extra Heavy Per Foot
2	$.30	$.35	$.42	$.32	$.38	$.45
3	.38	.46	.66	.41	.50	.70
4	.46	.60	.80	.50	.65	.86
5	.66	.88	1.10	.72	.92	1.16
6	.80	1.08	1.36	.88	1.16	1.46
8	1.50	1.80	2.00	1.70	2.00	2.28
10	2.50	3.00	3.60	2.70	3.20	4.00
12	3.60	4.00	5.00	4.00	4.40	5.60
15	5.60	6.40	8.00	6.20	7.00	8.80

1½-inch pipe and fittings take same lists as 2-inch.

Approximate Weight of Soil Pipe per Length

Size...inches	2	3	4	5	6	8	10	12	15
Standard.lbs.	3.6	5.2	7	9	11	17	23	33	45
Medium..lbs.	4	6	9	12	15	25	35	45	60
Ex. Hvy.S.H. .....lbs.	5	9	12	15	19	30	43	54	75
Ex.Hvy.D.H. .....lbs.	5.2	9.4	12.6	15.6	20	31.4	45	57	79

Approximate Weight of Soil Pipe Fittings

Standard

Size.....inches	2	3	4	5	6	8	10	12
Quarter Bend....pounds	4½	7	10½	13	16½	33	54	58½
Sixth Bend.....pounds	4	6½	9	11½	14	30	30	48
Eighth Bend....pounds	3½	6	8	10½	13	24	38	42½
T Branch.....pounds	7	11	14½	18½	23	33	42	102
San. T Branch...pounds	7½	12	16	20	24	49	100	....
Cross.....pounds	9½	14	19	23½	28½	40	70	100
Sanitary Cross..pounds	10½	15½	20½	25½	31½	52	....	....
Y Branch.....pounds	7½	12	17	22	28	58	106	158
Half Y Branch...pounds	7	11	15	19	24	...	....	....
Double Y Branch pounds	10½	16	22½	30	36½	77	121	....
Double Hub.....pounds	4	5¾	7½	9	10½	16	21	35
S Trap.....pounds	8½	14	21	28½	37½	94	....	....
P Trap.....pounds	7	12	17½	24½	31½	80	....	....
Rung Trap.....pounds	8½	13½	19½	26	34	54	....	....
Reducer.....pounds	...	4½	6	7½	9	8	21½	28

Extra Heavy

Size.....inches	2	3	4	5	6	8	10	12
Quarter Bend....pounds	6¾	10¼	15	19	23½	52	80	95
Sixth Bend.....pounds	6	9¼	13	16½	20	44	50	90
Eighth Bend....pounds	5½	8½	12¼	15¼	18¼	40	56	80
T Branch.....pounds	10¼	15¼	21	26½	32½	60	75	166
San. T Branch...pounds	11	16¼	22½	28	34½	80	135	210
Cross.....pounds	13¼	19¾	27	33½	40½	92	116	176
Sanitary Cross..pounds	14½	22	29½	36½	44½	79	161	...
Y Branch.....pounds	11	17	24	31½	39½	91	136	218
Half Y Branch...pounds	10¼	15½	21½	27½	34	90	....	...
Double Y Branch pounds	14¾	23	32	41½	52	100	153	266
Double Hub.....pounds	5¾	8¼	10¾	12¾	14¾	30	35	45
S Trap.....pounds	12	20	30	40½	53½	123	....	...
P Trap.....pounds	10½	17¼	25½	34½	45	100	....	...
Run Trap..... pounds	11¾	19	27½	37	48	110	....	...
Reducer..... pounds	...	6¼	8½	10¾	12¾	15	28½	48

To determine the right or left-hand inlet in bends and offsets, place the hub facing toward you with spigot lower than hub; on branches face the half on main toward you with branch pointing downward. On traps, place in regular position with the hub or inlet end nearest you.

Long quarter bends are measured from the center line of hub to end of spigot. Other long bends are measured from end of spigot to intersection of center line of hub with center line of the body of bend. ½ S or P traps are measured from end of spigot to center line of hub.

Quarter Bends

No. SP-3

Size Inches	Each Std.	Each Ex. Hy.	Size Inches	Each Std.	Each Ex. Hy.
2	$.40	$.55	8	$4.00	$5.00
3	.55	.70	10	5.90	6.50
4	.80	1.00	12	8.65	10.80
5	1.05	1.25	15	16.80	21.00
6	1.45	1.85	..	.....	.....

Fifth Bends

No. SP-4

Size In.	Standard Each	Ex. Hy. Each	Size In.	Standard Each	Ex. Hy. Each
2	$.45	$.60	8	$4.00	$5.00
3	.80	1.00	10	5.90	6.50
4	.80	1.00	12	8.65	10.80
5	1.05	1.25	15	16.80	21.00
6	1.30	1.55	..	.....	.....

Sixth Bends

No. SP-5

Size Inches	Price, Each Std.	Price, Each Ex. Hy.	Size Inches	Price, Each Std.	Price, Each Ex. Hy.
2	$.40	$.45	8	$4.00	$5.00
3	.60	.75	10	5.90	6.50
4	.75	.90	12	8.65	10.80
5	1.05	1.25	15	16.80	21.00
6	1.30	1.55	..	.....	.....

Eighth Bends

No. SP-6

Size In.	Standard Each	Ex. Hy. Each	Size In.	Standard Each	Ex. Hy. Each
2	$.35	$.40	8	$4.00	$5.00
3	.45	.55	10	5.90	6.50
4	.65	.80	12	8.65	10.80
5	.80	1.00	15	16.80	21.00
6	1.05	1.25	..	.....	.....

Sixteenth Bends

No. SP-7

Size Inches	Price, Each Std.	Price, Each Ex. Hy.	Size Inches	Price, Each Std.	Price, Each Ex. Hy.
2	$.35	$.40	8	$4.00	$5.00
3	.50	.70	10	5.90	6.50
4	.60	.75	12	8.65	10.80
5	.80	1.00	15	16.80	21.00
6	1.00	1.25	..	.....	.....

Double Hub Bends

No. SP-8 Quarter

No. SP-9 Eighth

No. SP-10 Sixteenth

Size In.	Standard Each	Ex. Hy. Each
2	$.75	$.90
3	.95	1.15
4	1.20	1.40
5	1.85	2.30
6	2.45	3.05

Quarter Bends With Inlet

No. SP-11 With R. H. or L. H. Side Inlet

No. SP-12 With Low Heel Inlet

No. SP-13 With High Heel Inlet

Size In.	Size Inlet In.	Each Std.	Each Ex. Hy.	Size Inches	Size Inlet Inches	Each Std.	Each Ex. Hy.
2	2	$1.25	$1.55	5	2	$3.70	$4.60
3	2	1.25	1.55	5	3	3.70	4.60
3	3	1.25	1.55	5	4	3.70	4.60
4	2	1.25	1.55	6	2	4.30	5.40
4	3	3.10	3.85	6	3	4.30	5.40
4	4	3.10	3.85	6	4	4.30	5.40

Tapped Quarter Bends

Tapped 1¼, 1½ or 2 Inches

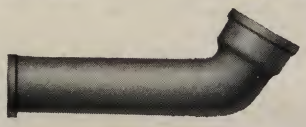
No. SP-34

Size	inches	4
Price, Standard	each	$.70
" Extra Heavy	"	.85

Long Bends

No. SP-14 Long Quarter Bends

No. SP-15 Long Eighth Bends



No. SP-16 Long Sixth Bends

Size In.	Length in Clear Inches	Standard Each	Extra Heavy Each	Size In.	Length in Clear Inches	Standard Each	Extra Heavy Each
2	12	$.90	$1.10	4	36	$4.90	$6.15
2	18	1.05	1.30	5	12	3.70	4.60
2	24	1.50	1.85	5	18	4.30	5.40
2	30	2.25	2.75	5	24	4.90	6.15
3	12	1.50	1.85	5	36	5.25	6.55
3	18	1.85	2.30	6	12	4.30	5.40
3	24	2.25	2.75	6	18	5.00	6.15
4	12	1.25	1.55	6	24	5.50	6.90
4	18	1.50	1.85	6	30	6.50	8.10
4	24	2.75	3.40	6	36	7.40	9.20
4	30	3.85	4.80	8	18	7.50	10.00

Short Sweep Quarter Bends

No. SP-28

Size In.	Price, Each Std.	Price, Each Extra Heavy	Size In.	Price, Each Std.	Price, Each Extra Heavy
2	$.60	$.75	6	$2.50	$3.10
3	.90	1.10	8	4.80	6.00
4	1.15	1.40	10	6.80	8.50
5	1.55	1.85	..	....	....

Long Sweep Quarter Bends

No. SP-27

Size In.	Std. Each	Extra Heavy Each	Size In.	Std. Each	Extra Heavy Each
2	$.75	$.90	8	$6.00	$7.50
3	.95	1.15	10	8.00	10.00
4	1.25	1.55	12	14.50	18.00
5	1.70	2.00	15	28.00	35.00
6	2.75	3.40	..	.....	.....

Special Washington Long Sweep Reducing Bends

No. G-27

Size	inches	3x2	4x3
Standard	each	$1.15	$1.40
Extra Heavy	each	1.35	1.75

Long Quarter Bends

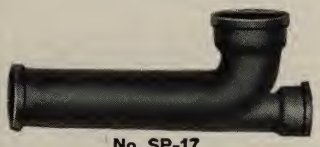
No. SP-19

With Foot Rest

For all long bends with foot rest add to list of regular bend as follows.

Size In.	Add Each	Size In.	Add Each	Size In.	Add Each
2	$.50	4	$1.00	6	$1.50
3	.75	5	1.25	..	....

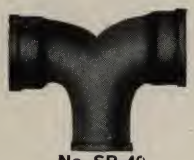
Long Quarter Bends
With 2-Inch Low Heel Inlet



No. SP-17

Size In.	Standard Each	Extra Heavy Each	Length in Clear Inches
4	$2.50	$2.85	18

Double Quarter Bends



No. SP-40

Size Inches	Standard Each	Ex. Hvy Each
2x2	$1.50	$1.85
3x2	2.45	3.05
3x3	2.55	3.20
4x2	2.80	3.45
4x3	2.80	3.45
4x4	2.80	3.45

Single Hub Return Bends

No. SP-41

Size Inches	Standard Each	Ex. Hvy. Each
2	$1.25	$1.55
3	1.50	1.85
4	1.70	2.00
5	2.45	3.05
6	3.10	3.85
8	7.00	7.75

Double Hub Return Bends

No. SP-42

Size Inches	Price, Each Standard	Price, Each Extra Heavy
2	$1.35	$1.70
3	1.60	2.00
4	1.75	2.20
5	2.75	3.40
6	3.40	4.25
8	7.40	8.25

Reducing Quarter Bends

No. SP-36

Size Inches	Standard Each	Extra Heavy Each
3x2	$.90	$1.10
4x2	1.25	1.50
4x3	1.30	1.60
5x4	1.90	2.20
6x4	2.40	3.00

Reilly Long Sweep Quarter Bends with Foot Rest

No. SP-23

Size Inches	Standard Each	Ex. Hvy. Each
4	$3.80	$4.50
5	5.25	6.25
6	6.30	7.50
4x2	3.15	3.70
5x4	4.05	4.75

Tapped T Branches
Tapped 1¼, 1½ or 2 Inches
Regular Pattern

No. SP-54

Size Inches	Price, Each Standard	Price, Each Extra Heavy	Size Inches	Price, Each Standard	Price, Each Extra Heavy
2	$.70	$.85	5	$1.60	$2.00
3	.85	1.10	6	2.50	3.10
4	1.00	1.25	.	....	....

Long Pattern

Size In.	Price, Each Std.	Price, Each Ex. Hy.	Size In.	Price, Each Std.	Price, Each Ex. Hy.	Size In.	Price, Each Std.	Price, Each Ex. Hy.
2x12	$1.45	$1.80	3x30	$3.80	$4.75	5x18	$4.35	$5.40
2x18	2.10	2.60	3x36	4.30	5.35	5x24	5.25	6.55
2x24	2.35	2.90	4x12	3.05	3.80	5x30	5.90	7.40
2x30	2.70	3.35	4x15	3.30	4.10	5x36	6.75	8.45
2x36	2.90	3.65	4x18	3.55	4.45	6x18	4.95	6.15
3x12	1.70	2.10	4x24	4.35	5.40	6x24	6.20	7.70
3x18	2.75	3.40	4x30	4.90	6.15	6x30	7.00	8.75
3x24	3.20	4.00	4x36	5.50	6.90	6x36	7.90	9.85

T Branches
Plain

No. SP-52

Size In.	Price, Each Std.	Price, Each Extra Heavy	Size In.	Price, Each Std.	Price, Each Extra Heavy	Size In.	Price Each Std.	Price Each Extra Heavy
2x2	$.55	$.75	5x3	$1.50	$1.85	6x6	$2.40	$3.00
3x2	.85	1.05	5x4	1.60	2.00	8	6.00	9.00
3x3	.85	1.10	5x5	2.00	2.50	10	10.80	15.10
4x2	.85	1.10	6x2	1.80	2.15	12	15.10	19.40
4x3	1.15	1.45	6x3	1.80	2.15	15	33.60	42.00
4x4	1.20	1.50	6x4	1.80	2.15	...	.....	.....
5x2	1.20	1.45	6x5	2.00	2.45	...	.....	.....

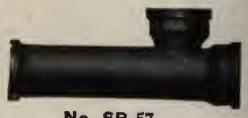
T Branches
With Right-hand Side Inlet
Add Extra to Above List

No- SP-53

Size Inlets In.	Right or Left Inlets	Brass Trap Screws Incl. Inlets	Size Inlets In.	Right or Left Inlets	Brass Trap Screws Incl. Inlets
2	$1.00	$1.50	5	$2.00	$3.00
3	1.25	2.00	6	2.50	3.50
4	1.50	2.50	.	....	...

When ordering specify whether wanted with right or left-hand side inlet.

Long T Branches



No. SP-57

Size In.	Length in Clear In.	Price, Each Std.	Price, Each Extra Heavy
2	12	$1.20	$1.50
2	18	2.00	2.45
2	24	2.25	2 75
2	30	2.45	3 05
2	36	2.70	3.35
3	12	1.45	1 80
3	18	2.60	3 25
3	24	3.10	3 85
3	30	3.55	4 45
3	36	4.05	5 05
4	12	2.80	3.50
4	18	3.50	4.30
4	24	4.10	5 05
4	30	4.65	5 85
4	36	5.35	6 60

Size In.	Length in Clear In.	Price, Each Std.	Price, Each Extra Heavy
5	18	$4.20	$5.25
5	24	4.95	6.15
5	30	5.70	7.10
5	36	6.60	8.15
6	18	4.90	6.15
6	24	5.80	7.25
6	30	6.80	8.45
6	36	7.70	9.55

Tee Branches, All Hub Ends

No. SP-56

Size Inches	Std. Each	Ex. Hvy. Each
2	$2.25	$2.75
3	3.45	4.30
4	4.65	5.85
5	5.65	7.05
6	7.35	9.20

Sanitary T Branches
Tapped 1¼, 1½ or 2 Inches
Regular Pattern

No. SP-62

Size Inches	Std. Each	Ex. Hvy. Each	Size Inches	Std. Each	Ex. Hvy. Each
2	$.75	$.90	5	$1.85	$2.30
3	.95	1.20	6	2.95	3.70
4	1.25	1.55	.	....	....

Long Pattern

Size In.	Std. Each	Ex. Hvy. Each	Size In.	Std. Each	Ex. Hvy. Each	Size In.	Std. Each	Ex. Hvy. Each
2x12	$1.45	$1.80	3x30	$3.80	$4.75	5x18	$4.35	$5.40
2x18	2.10	2.60	3x36	4.30	5.35	5x24	5.25	6.55
2x24	2.35	2.90	4x12	3.05	3.80	5x30	5.90	7.40
2x30	2.70	3.35	4x15	3.30	4.10	5x36	6.75	8.45
2x36	2.90	3.65	4x18	3.55	4.45	6x18	4.95	6.15
3x12	1.70	2.10	4x24	4.35	5.40	6x24	6.20	7.70
3x18	2.75	3.40	4x30	4.90	6.15	6x30	7.00	8.75
3x24	3.20	4.00	4x36	5.50	6.90	6x36	7.90	9.85

Sanitary T Branches

No. SP-59

Size In.	Std. Each	Ex. Hvy. Each	Size In.	Std. Each	Ex. Hvy. Each
2x2	$.55	$.75	5x5	$2.00	$2.50
3x2	.85	1.05	6x2	1.80	2.15
3x3	.85	1.10	6x3	1.80	2.15
3x4	1.70	2.15	6x4	1.80	2.15
4x2	.85	1.10	6x5	2.00	2.45
4x3	1.15	1.45	6x6	2.40	3.00
4x4	1.20	1.50	8	6.00	9.00
5x2	1.20	1.45	10	10.80	15.10
5x3	1.50	1.85	12	15.10	19.40
5x4	1.60	2.00	15	33.60	42.00

Sanitary T Branches

With Side Inlet

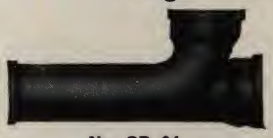
Add Extra to Above List

No. SP-60
With Right-Hand Inlet

Size Inlets In.	Right or Left Inlets	Brass Trap Screws Incl. Inlets
2	$1.00	$1.50
3	1.25	2.00
4	1.50	2.50
5	2.00	3.00
6	2.50	3.50

When ordering specify whether wanted with right or left-hand side inlet.

Long Sanitary T Branches



No. SP-64

Size Inches	Length in Clear Inches	Std. Each	Ex. Hvy. Each
2	12	$1.20	$1.50
2	18	2.00	2.45
2	24	2.25	2.75
2	30	2.45	3.05
2	36	2.70	3.35
3	12	1.45	1.80
3	18	2.60	3.25
3	24	3.10	3.85
3	30	3.55	4.45
3	36	$4.05	$5.05
4	12	2.80	3.50
4	18	3.50	4.30
4	24	4.10	5.05
4	30	4.65	5.85
4	36	5.35	6.60
5	18	4.20	5.25
5	24	4.95	6.15
5	30	5.70	7.10
5	36	6.60	8.15
6	18	4.90	6.15
6	24	5.80	7.25
6	30	6.80	8.45
6	36	7.70	9.55
8	36	9.00	....

Y and Half Y Branches

No. SP-73 Y Branch

No. SP-74 Half Y

Size In.	Price, Each Std.	Price, Each Extra Heavy	Size In.	Price, Each Std.	Price, Each Extra Heavy	Size In.	Price, Each Std.	Price, Each Extra Heavy
2x2	$.55	$.75	5x3	$1.50	$1.85	6x6	$2.40	$3.00
3x2	.85	1.05	5x4	1.60	2.00	8	6.00	9.00
3x3	.85	1.10	5x5	2.00	2.50	10	10.80	15.10
4x2	.85	1.10	6x2	1.80	2.15	12	15.10	19.40
4x3	1.15	1.45	6x3	1.80	2.15	15	33.60	42.00
4x4	1.20	1.50	6x4	1.80	2.15	...	.....	.....
5x2	1.20	1.45	6x5	2.00	2.45	...	.....	.....

With Side Inlet

Add Extra to Above List

Y Branch
No. SP-75

Size Inlet Inches	Right or Left Inlet Only	Brass Trap Screws Incl. Inlets
2	$1.00	$1.50
3	1.25	2.00
4	1.50	2.50
5	2.00	3.00
6	2.50	3.50

Half Y Branch
No. SP-76

Long Y Branches

No. SP-78

Size Inches	Length in Clear In.	Price, Each Std.	Price, Each Extra Heavy
2	12	$1.20	$1.50
2	18	2.00	2.45
2	24	2.25	2.75
2	30	2.45	3.05
2	36	2.70	3.35
3	12	1.45	1.80
3	18	2.60	3.25
3	24	$3.10	$3.85
3	30	3.55	4.45
3	36	4.05	5.05
4	12	2.80	3.50
4	18	3.50	4.30
4	24	4.10	5.05
4	30	4.65	5.85
4	36	5.35	6.60
5	18	4.20	5.25
5	24	4.95	6.15
5	30	5.70	7.10
5	36	6.60	8.15
6	18	4.90	6.15
6	24	5.80	7.25
6	30	6.80	8.45
6	36	7.70	9.55

Special Reducing Sanitary T and Y Branches

No. SP-63 Sanitary T Branch

No. SP-79 Y Branch

Size Inches	Standard Each	Extra Heavy Each
3x2x2	$2.20	$2.50
3x2x3	2.20	2.50
3x2x4	2.95	3.70
3x4x3	2.95	3.70
4x2x2	2.95	3.70
4x2x4	2.95	3.70
4x3x4	2.95	3.70
5x3x4	3.80	4.75
5x4x4	3.80	4.75
5x4x5	3.80	4.75
6x3x4	4.60	5.75
6x4x4	4.60	5.75
6x4x5	4.60	5.75
6x4x6	4.60	5.75
6x5x4	4.60	5.75
6x5x5	4.60	5.75
6x5x6	4.60	5.75

Plain Ventilating Branches

No. SP-116

Size In.	Std. Each	Ex. Hvy. Each	Size In.	Std. Each	Ex. Hvy. Each
2x2	$.90	$1.10	5x4	$4.35	$5.40
3x2	1.15	1.40	5x5	4.35	5.40
3x3	1.15	1.40	6x2	6.15	7.70
4x2	1.15	1.40	6x3	6.15	7.70
4x3	1.40	1.85	6x4	6.15	7.70
4x4	1.40	1.85	6x5	6.15	7.70
5x2	4.35	5.40	6x6	6.15	7.70
5x3	4.35	5.40	...	....	....

Tapped Ventilating Branches

No. SP-117

Size Inches	Thread Inches	Std. Each	Ex. Hvy. Each
2	1¼, 1½, 2	$1.40	$1.70
3	1¼, 1½, 2	2.00	2.45
4	1¼, 1½, 2	2.20	2.75
5	1¼, 1½, 2	2.80	3.50
6	1¼, 1½, 2	3.40	4.25

Inverted Y Branches

Tapped for Iron Pipe

No. SP-80

Size In.	Threads Inches	Std. Each	Ex. Hvy Each
2	1¼, 1½, 2	$1.40	$1.70
3	1¼, 1½, 2	2.00	2.45
4	1¼, 1½, 2	2.20	2.75
5	1¼, 1½, 2	2.80	3.50
6	1¼, 1½, 2	3.40	4.25

Inverted Y Branches

No. SP-77

Size In.	Std. Each	Ex. Hvy. Each	Size In.	Std. Each	Ex. Hvy. Each
2x2	$1.00	$1.25	5x4	$3.10	$3.85
3x2	1.40	1.85	5x5	3.40	4.60
3x3	1.40	1.85	6x2	3.70	4.60
4x2	1.70	2.15	6x3	3.70	4.60
4x3	1.70	2.15	6x4	4.95	6.15
4x4	1.70	2.15	6x5	4.95	6.15
5x2	2.45	3.05	6x6	4.95	6.15

Double Y Branches

No. SP-90

Size In.	Std. Each	Extra Heavy Each	Size Inches	Std. Each	Extra Heavy Each
2x2	$1.25	$1.55	5x 5	$4.95	$6.15
3x2	1.65	2.00	6x 2	6.15	7.70
3x3	1.65	2.00	6x 3	6.15	7.70
4x2	1.80	2.15	6x 4	6.15	7.70
4x3	1.80	2.15	6x 5	6.15	7.70
4x4	1.80	2.15	6x 6	6.15	7.70
5x2	4.95	6.15	8x 8	9.00	13.50
5x3	4.95	6.15	10x10	16.20	22.65
5x4	4.95	6.15	12x10	22.70	29.15

With Side Inlet

No. SP-91

Size Inlet In.	Extras, Add to List, Each: Inlet Only	Brass Trap Screw Incl. Inlet	Size Inlet In.	Extras Add to List, Each: Inlet Only	Brass Trap Screw Incl. Inlet
2	$1.00	$1.50	5	$2.00	$3.00
3	1.25	2.00	6	2.50	3.50
4	1.50	2.50	..	....	....

Long Double Y Branches

No. SP-94

Size Inches	Price, Each: Standard	Ex. Hy.
2x2x12	$1.60	$2.00
2x2x18	2.75	3.45
2x2x24	3.00	3.75
4x2x18	4.25	5.30
4x2x24	4.85	6.05
4x4x18	4.65	5.80
4x4x24	5.25	6.55
4x4x30	5.90	7.35
4x4x36	6.50	8.10
5x4x18	5.40	6.75
5x4x24	6.10	7.65
5x4x30	6 90	8.60
5x4x36	7.70	9.65
6x4x18	6.10	7.65
6x4x24	7.00	8.75
6x4x30	7.95	9.95
6x4x36	8.85	11.05

Double Angle Y Branches

No. SP-100

Size Inches	Price, Each: Standard	Extra Heavy
2x2	$1.90	$2.40
3x3	3.20	4.00
4x4	3.60	4.50
5x4	4.60	5.75
6x4	5.80	7.25
5x4x2	4.60	5.75
5x4x30	9.20	11.50

Double Inverted Y Branches

No. SP-81

Size In.	Price, Each: Standard	Ex. Hy.
2x2	$2.45	$3.05
3x2	3.10	3.85
3x3	3.10	3.85
4x2	3.70	4.60
4x3	3.70	4.60
4x4	3.70	4.60

Crosses

Plain

No. SP-119

Size In.	Price, Each: Std.	Extra Heavy	Size In.	Price, Each: Std.	Extra Heavy
2x2	$1.25	$1.55	5x5	$4.95	$6.15
3x2	1.65	2.00	6x2	6.15	7.70
3x3	1.65	2.00	6x3	6.15	7.70
4x2	1.80	2.15	6x4	6.15	7.70
4x3	1.80	2.15	6x5	6.15	7.70
4x4	1.80	2.15	6x6	6.15	7.70
5x2	4.95	6.15	8	9.00	13.50
5x3	4.95	6.15	10	16.20	22.65
5x4	4.95	6.15	12x10	22.70	29.15

Crosses

With Side Inlet

Add Extra to Above List

No. SP-120

Size Inlet In.	Price Each Inlet Only	Size Inlet In.	Price Each Inlet Only
2	$1.00	5	$2.00
3	1.25	6	2.50
4	1.50	.	....

Tapped Crosses

For Iron Pipe

No. SP-123

Size Inches	Standard Each	Extra Heavy Each	Thread Inches
2	$1.15	$1.40	1¼, 1½, 2
3	1.25	1.55	1¼, 1½, 2
4	1.40	1.70	1¼, 1½, 2
5	2.25	2.80	1¼, 1½, 2
6	3.45	4.30	1¼, 1½, 2

Sanitary Crosses

No. SP-124

Size In.	Price, Each: Std.	Ex. Hy.	Size In.	Price, Each: Std.	Ex. Hy.
2x2	$1.25	$1.55	5x 5	$4.95	$6.15
3x2	1.65	2.00	6x 2	6.15	7.70
3x3	1.65	2.00	6x 3	6.15	7.70
4x2	1.80	2.15	6x 4	6.15	7.70
4x3	1.80	2.15	6x 5	6.15	7.70
4x4	1.80	2.15	6x 6	6.15	7.70
5x2	4.95	6.15	8	9.00	13.50
5x3	4.95	6.15	10	16.20	22.65
5x4	4.95	6.15	12x10	22.70	29.15

Sanitary Crosses

With Side Inlet

Add Extra to Above List

No. SP-125

Size Inlet In.	Inlets Each	Size Inlet In.	Inlets Each
2	$1.00	5	$2.00
3	1.25	6	2.50
4	1.50	..	.....

Tapped Sanitary Crosses

No. SP-127

Size Inches	Thread Inches	Standard Each	Ex. Hvy. Each
2	1¼, 1½, 2	$1.25	$1.55
3	1¼, 1½, 2	1.50	1.85
4	1¼, 1½, 2	1.75	2.15
5	1¼, 1½, 2	2.75	3.40
6	1¼, 1½, 2	4.10	5.10

Long Crosses

No. SP-121

Size Inches	Price, Each Standard	Price, Each Extra Heavy
2x2x12	$1.60	$2.00
2x2x18	2.75	3.45
2x2x24	3.00	3.75
4x2x18	4.25	5.30
4x2x24	4.85	6.05
4x4x18	4.65	5.80
4x4x24	5.25	6.55
4x4x30	5.90	7.35
4x4x36	6.50	8.10
5x4x18	5.40	6.75
5x4x24	6.10	7.65
5x4x30	6.90	8.60
5x4x36	7.70	9.65
6x4x18	6.10	7.65
6x4x24	7.00	8.75
6x4x30	7.95	9.95
6x4x36	8.85	11.05

H Branches

Philadelphia Pattern

No. SP-113

Size Inches	Price, Each Standard	Price, Each Extra Heavy
2x2	$.95	$1.20
3x2	1.45	1.80
4x2	2.15	2.70
4x4	2.15	2.70

Combination Y and Eighth Bends

No. SP-101

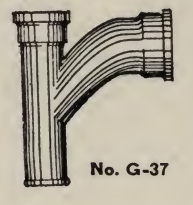
Size In.	Price, Each Std.	Price, Each Extra Heavy	Size In.	Price, Each Std.	Price, Each Extra Heavy	Size In.	Price, Each Std.	Price, Each Extra Heavy
2x2	$1.05	$1.30	4x4	$1.70	$2.15	6x2	$5.55	$6.90
3x2	1.70	2.15	5x2	3.70	4.60	6x3	5.55	6.90
3x3	1.70	2.15	5x3	3.70	4.60	6x4	5.55	6.90
4x2	1.70	2.15	5x4	3.70	4.60	6x5	5.55	6.90
4x3	1.70	2.15	5x5	3.70	4.60	6x6	5.55	6.90

Long Combination Y and Eighth Bends

No. SP-104

Size In.	Lgth. In.	Price, Each Std.	Price, Each Ex. Hy.	Size In.	Lgth. In.	Price, Each Std.	Price, Each Ex. Hy.
2x2	24	$2.60	$3.25	4x4	30	$6.05	$7.55
3x3	24	3.90	4.85	4x4	36	6.70	8.40
3x3	36	5.05	6.30	5x4	24	5.95	7.45
4x2	18	3.60	4.50	5x4	30	6.90	8.60
4x2	24	4.30	5.35	5x4	36	7.75	9.70
4x3	18	4.00	5.00	6x4	30	7.70	9.60
4x3	24	4.70	5.90	6x4	36	8.60	10.75
4x3	36	6.10	7.60	6x5	36	9.00	11.25
4x4	18	4.45	5.55	6x6	36	9.00	11.25
4x4	24	5.30	6.60	...	..	....	.....

Odd lengths use next highest number.

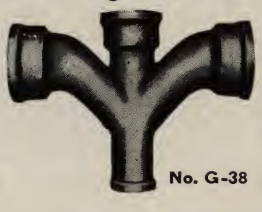


No. G-37

Washington Reducing Combination Y and Eighth Bends

Size	inches	3x4
Standard	each	$2.00
Extra Heavy	each	2.50

Washington Reducing Double Combination Y and Eighth Bends



No. G-38

Size	inches	3x4
Standard	each	$4.50
Extra Heavy	each	5.00

Double Combination Y and Eighth Bends

No. S. P. 109

Size Inches	Price, Each Std.	Price, Each Ex. Hy.	Size Inches	Price, Each Std.	Price, Each Ex. Hy.
3x2	$2.80	$3.50	5x5	$5.50	$6.90
4x4	3.30	4.10	6x4	8.30	10.35
5x4	5.50	6.90	...	....	.....

Offsets

Regular Offset
No. SP-133

Eighth Bend Offset
No. SP-139

Size In.	Offset In.	Std. Each	Ex. Hy. Each	Size In.	Offset In.	Std. Each	Ex. Hy. Each	Size In.	Offset In.	Std. Each	Ex. Hy. Each
2	2	$.60	$.75	3	22	$3.10	$3.85	5	18	$6.10	$7.60
2	4	.60	.75	3	24	3.70	4.60	5	20	6.35	7.95
2	6	.75	.90	4	2	1.00	1.25	5	22	6.70	8.35
2	8	.75	.90	4	4	1.00	1.25	5	24	6.90	8.65
2	10	1.00	1.25	4	6	1.10	1.40	6	2	3.15	3.95
2	12	1.15	1.40	4	8	1.25	1.55	6	4	3.45	4.30
2	14	1.25	1.55	4	10	1.50	1.85	6	6	3.45	4.30
2	16	1.35	1.70	4	12	1.60	2.00	6	8	3.80	4.75
2	18	1.70	2.15	4	14	1.90	2.45	6	10	4.50	5.60
2	20	2.00	2.50	4	16	2.00	3.40	6	12	5.10	6.35
2	22	2.20	2.75	4	18	2.30	3.55	6	14	6.40	8.00
2	24	2.45	3.05	4	20	2.60	4.30	6	16	6.90	8.60
3	2	.95	1.15	4	22	3.10	4.60	6	18	7.25	9.05
3	4	1.00	1.25	4	24	3.70	5.05	6	20	7.65	9.55
3	6	1.10	1.40	5	2	2.50	3.15	6	22	8.10	10.15
3	8	1.25	1.55	5	4	2.50	3.15	6	24	8.50	10.60
3	10	1.50	1.85	5	6	2.85	3.55	6	26	8.45	10.55
3	12	1.60	2.00	5	8	3.15	3.95	8	4	8.00	11.00
3	14	1.90	2.30	5	10	3.35	4.20	8	6	9.60	12.00
3	16	2.10	2.60	5	12	3.70	4.65	8	8	10.40	13.00
3	18	2.30	2.90	5	14	5.25	6.55	.	..	.....	.....
3	20	2.75	3.40	5	16	5.50	6.90	.	..	.....	.....

For odd lengths use next highest list.

Single Hubs

No. SP-140

Size In.	Standard Each	Extra Heavy Each	Size In.	Standard Each	Extra Heavy Each
2	$.50	$.60	6	$1.85	$2.45
3	.65	.90	8	2.50	3.50
4	.70	.90	10	3.90	4.85
5	1.25	1.55	..	....	....

Double Hubs

No. SP-141

Size In.	Standard Each	Extra Heavy Each	Size Inches	Standard Each	Extra Heavy Each
2	$.40	$.45	8	$2.80	$3.50
3	.50	.75	10	4.85	6.20
4	.60	.75	12	8.65	10.80
5	1.00	1.25	15	17.85	22.30
6	1.25	1.55	..	.....	.....

Reducers

No. SP-142

Size In.	Std. Each	Extra Heavy Each	Size In.	Std. Each	Extra Heavy Each	Size In.	Std. Each	Extra Heavy Each
3x2	$.40	$.50	8x4	$2.80	$3.50	12x8	$8.65	$10.80
4x2	.40	.50	8x5	2.80	3.50	12x10	8.65	10.80
4x3	.50	.65	8x6	2.80	3.50	15x4	17.85	22.30
5x2	.60	.75	10x4	4.85	6.20	15x5	17.85	22.30
5x3	.60	.75	10x5	4.85	6.20	15x6	17.85	22.30
5x4	.60	.75	10x6	4.85	6.20	15x8	17.85	22.30
6x2	.80	1.00	10x8	4.85	6.20	15x10	17.85	22.30
6x3	.80	1.00	12x4	8.65	10.80	15x12	17.85	22.30
6x4	.80	1.00	12x5	8.65	10.80	.....	.....	.....
6x5	.80	1.00	12x6	8.65	10.80	.....	.....	.....

Extension Pieces

No. SP-163

Size Inches	Price, Each Standard	Price, Each Extra Heavy	Size Inches	Price, Each Standard	Price, Each Extra Heavy	Size Inches	Price, Each Standard	Price, Each Extra Heavy
2x 4	$.60	$.75	3x20	$2.45	$3.05	5x14	$2.70	$3.40
2x 6	.60	.75	3x22	2.75	3.40	5x16	2.95	3.70
2x 8	.75	.90	3x24	2.95	3.70	5x18	3.20	4.00
2x10	.90	1.10	4x 4	1.25	1.55	5x20	3.70	4.60
2x12	1.00	1.25	4x 6	1.25	1.55	5x22	4.20	5.25
2x14	1.15	1.40	4x 8	1.40	1.70	5x24	4.70	5.85
2x16	1.25	1.55	4x10	1.50	1.85	6x 4	2.45	3.05
2x18	1.40	1.70	4x12	1.70	2.00	6x 6	2.45	3.05
2x20	1.50	1.85	4x14	1.85	2.30	6x 8	2.70	3.40
2x22	2.00	2.45	4x16	2.15	2.60	6x10	2.95	3.70
2x24	2.50	3.05	4x18	2.45	3.05	6x12	3.20	4.00
3x 4	1.00	1.25	4x20	2.95	3.70	6x14	3.45	4.30
3x 6	1.00	1.25	4x22	3.40	4.30	6x16	3.90	4.90
3x 8	1.10	1.40	4x24	3.70	4.60	6x18	4.45	5.55
3x10	1.25	1.55	5x 4	1.85	2.30	6x20	4.90	6.15
3x12	1.50	1.85	5x 6	1.85	2.30	6x22	5.50	6.90
3x14	1.75	2.15	5x 8	2.10	2.60	6x24	6.15	7.70
3x16	1.95	2.45	5x10	2.30	2.90	6x30	7.85	9.80
3x18	2.20	2.75	5x12	2.45	3.05	6x36	8.00	10.00

Short Tapped Increasers

No. SP-168

Tapped I.P. Inches	Hub In.	Std. Each	Extra Heavy Each	Tapped I.P. Inches	Hub In.	Std. Each	Extra Heavy Each
1¼, 1½	2	$.60	$.75	2½, 3	5	$1.60	$1.90
1¼, 1½, 2	3	.90	1.10	2½, 3	6	2.20	2.65
1¼, 1½, 2	4	1.00	1.25	3½, 4	5	2.00	2.30
1¼, 1½, 2	5	1.25	1.55	3½, 4	6	2.60	3.05
1¼, 1½, 2	6	1.85	2.30	5	6	3.05	3.50
2½, 3	4	1.35	1.60	.....	.	....	....

Increasers

Hub end to govern price.

No. SP-166

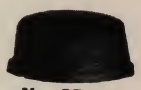
Size In.	Std. Each	Extra Heavy Each	Size In.	Std. Each	Extra Heavy Each
2x3	$.90	$1.10	5x10	$6.40	$8.00
2x4	1.25	1.55	6x10	6.40	8.00
3x4	1.25	1.55	8x10	6.40	8.00
2x5	1.60	2.00	4x12	9.20	11.50
3x5	1.60	2.00	5x12	9.20	11.50
4x5	1.60	2.00	6x12	9.20	11.50
2x6	1.85	2.30	8x12	9.20	11.50
3x6	1.85	2.30	10x12	9.20	11.50
4x6	1.85	2.30	4x15	16.00	20.00
5x6	1.85	2.30	5x15	16.00	20.00
4x8	4.00	5.00	6x15	16.00	20.00
5x8	4.00	5.00	8x15	16.00	20.00
6x8	4.00	5.00	10x15	16.00	20.00
4x10	6.40	8.00	12x15	16.00	20.00

Tapped Increasers

No. SP-167

Tapped Iron Pipe Inches	Hub Inlet Inches	Std. Each	Extra Heavy Each
1¼ or 1½	2	$.75	$.90
1¼, 1½ or 2	3	1.40	1.70
1¼, 1½ or 2	4	1.50	1.85
1¼, 1½ or 2	5	2.10	2.45
1¼, 1½ or 2	6	2.40	3.00
2½ or 3	4	1.85	2.20
2½ or 3	5	2.45	2.80
2½ or 3	6	2.75	3.35
3½ or 4	5	2.85	3.20
3½ or 4	6	3.15	3.75
5	6	3.60	4.20

Plugs



No. SP-145

Size Inches	Price, Each Standard	Price, Each Extra Heavy	Size Inches	Price, Each Standard	Price, Each Extra Heavy
2	$.25	$.30	8	$1.20	$1.50
3	.40	.45	10	2.60	3.25
4	.45	.60	12	3.45	4.30
5	.60	.75	15	5.60	7.00
6	.75	.90	..	....	....

Sleeves

No. SP-146

Size Inches	Standard Each	Extra Heavy Each	Size Inches	Standard Each	Extra Heavy Each
2	$.60	$.75	8	$2.80	$3.50
3	.75	.90	10	4.85	6.20
4	.75	.90	12	8.65	10.80
5	1.25	1.55	15	17.85	22.30
6	1.85	2.30	..	.....	.....

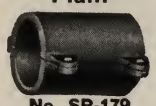
Thimbles

No. SP-148

Size Inches	Price, Each Standard	Price, Each Extra Heavy	Size Inches	Price, Each Standard	Price, Each Extra Heavy
2	$.60	$.75	6	$1.85	$2.30
3	.75	.90	8	2.80	3.50
4	.75	.90	10	4.85	6.20
5	1.25	1.55	12	8.65	10.80

Soil Pipe Bands

Plain



No. SP-179

Size.....inches	2	3	4	5	6
No. SP-179, Std.....each	$.90	$1.00	$1.15	$1.35	$1.60
No. SP-179, Ex. Hy.....each	1.10	1.25	1.40	1.70	2.00

Fresh Air Inlets

No. SP-156

Size.....inches	2	3	4	4x12
Standard.....each	$.90	$1.00	$1.10	$1.60
Extra Heavy....each	1.15	1.25	1.40	2.00

Fresh Air Inlets
Pittsburgh Pattern

No. SP-158

Size Inches	Price, Each Std.	Ex. Hy.
2	$.40	$.50
3	.50	.60
4	.65	.80
5	.85	.95
6	1.25	1.50

Vent Caps

No. SP-150 Plain

Size Inches	With Spigot Each	With Set Screw Each
2	$.60	$.60
3	.70	.65
4	.90	.85
5	1.85	1.25
6	2.00	1.55

No. SP-151 With Set Screw

Plain Pipe Rests

No. SP-182

Size, In.	Std. Each	Ex. Hy. Each
2	$.30	$.40
3	.40	.45
4	.40	.45
5	.75	.90
6	.95	1.15
8	1.75	2.25
10	2.15	3.25

Tapped Pipe Rests

No. SP-183

Size.....in.	4	6
Std.....ea.	$1.00	$1.45
Ex. Hy...ea.	1.15	....

Soil Pipe Straps

Size Pipe Inches	Size Stock Inches	Each
2	¼x1¼	$.60
3	¼x1¼	.70
4	¼x1½	.80
5	¼x1½	.90
6	¼x1½	1.15

Made of steel. Other sizes made to order.

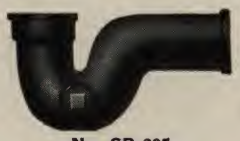
Soil Pipe Hooks

No. SP-187

Size.....inches	2	3	4	5	6
Each.....	$.20	.25	.30	.35	.40

Traps
With Brass Trap Screw

No. SP-203 Full S



No. SP-205 Half S

No. SP-204 Three-Quarter S

Add for brass trap screw to list price of plain traps as follows:

Size Trap Screw In.	Add to List Each	Size Trap Screw In.	Add to List Each
2	$1.50	5	$3.00
3	2.00	6	3.50
4	2.50	.	....

No. 1-V Cast Iron P Traps
4-Inch

Tapped in heel for drain pipe from frost proof closet.

Size.....inches	4
Standard.....each	$1.75
Extra Heavy..each	2.10

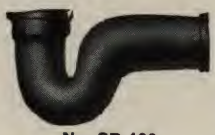
Plain S Traps

No. SP 188

Size Inches	Standard Each	Extra Heavy Each
2	$.90	$1.10
3	1.15	1.40
4	1.50	1.85
5	4.30	5.40
6	4.95	6.15
8	10.00	13.00

Plain P Traps

Made of cast iron.



No. SP-190

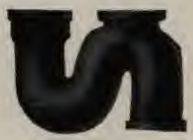
Size Inches	Standard Each	Extra Heavy Each
2	$.90	$1.10
3	1.15	1.40
4	1.50	1.85
5	4.30	5.40
6	4.95	6.15
8	10.00	13.00

Plain Running Traps

No. SP 209

Size In.	Standard Each	Ex. Hy. Each
2	$.90	$1.10
3	1.15	1.40
4	1.50	1.85
5	4.30	5.40
6	4.95	6.15
8	10.00	13.00

S Traps with Hand Hole and Cover



No. SP-194

Size In.	Price, Each Std.	Ex. Hy.
2	$1.25	$1.55
3	1.85	2.30
4	2.50	3.10
5	4.95	6.15
6	5.55	6.90
8	10.75	13.75

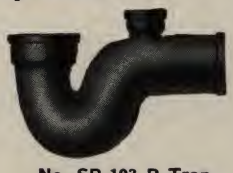
P Traps with Hand Hole and Cover

No. SP-196

Size In.	Standard Each	Ex. Hvy. Each
2	$1.25	$1.55
3	1.85	2.30
4	2.50	3.10
5	4.95	6.15
6	5.55	6.90
8	10.75	13.75

Traps with Top Vent

No. SP-191 S Trap



No. SP-193 P Trap

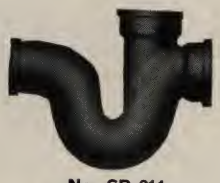
Size Inches	Each Std.	Ex. Hy.	Size Inches	Each Std.	Ex. Hy.
2x2	$1.20	$1.50	5x4	$4.55	$5.70
3x2	1.35	1.70	5x5	4.55	5.70
3x3	1.35	1.70	6x2	5.25	6.50
4x2	2.20	2.75	6x3	5.25	6.50
4x3	2.20	2.75	6x4	5.25	6.50
4x4	2.20	2.75	6x5	5.25	6.50
5x2	4.55	5.70	6x6	5.25	6.50
5x3	4.55	5.70	...	....	....

Running Traps with Hand Hole and Cover

No. SP-210

Size In.	Standard Each	Ex. Hvy. Each
2	$1.25	$1.55
3	1.85	2.30
4	2.50	3.10
5	4.95	6.15
6	5.55	6.90
8	10.75	13.75

Running Traps



No. SP-211
With Hub Vent

No. SP-212
With Double Hub Vent

Size Inches	Std. Each	Ex. Hy. Each	Size Inches	Std. Each	Ex. Hy. Each
2x2	$1.20	$1.50	2x2	$1.60	$2.00
3x2	1.35	1.70	3x2	1.80	2.25
3x3	1.35	1.70	3x3	1.80	2.25
4x2	2.20	2.75	4x2	2.60	3.25
4x3	2.20	2.75	4x3	2.60	3.25
4x4	2.20	2.75	4x4	2.60	3.25
5x2	4.55	5.70	5x2	4.80	6.00
5x3	4.55	5.70	5x3	4.80	6.00
5x4	4.55	5.70	5x4	4.80	6.00
5x5	4.55	5.70	5x5	4.80	6.00
6x2	5.25	6.50	6x2	5.60	7.00
6x3	5.25	6.50	6x3	5.60	7.00
6x4	5.25	6.50	6x4	5.60	7.00
6x5	5.25	6.50	6x5	5.60	7.00
6x6	5.25	6.50	6x6	5.60	7.00
8x4	12.00	15.00	8x4	13.60	17.00
8x6	12.00	15.00	8x6	13.60	17.00
8x8	15.00	18.00	8x8	17.00	20.00
10x4	21.60	27.00	10x4	24.00	30.00
10x6	21.60	27.00	10x6	24.00	30.00
10x8	21.60	27.00	10x8	24.00	30.00
12x6	32.00	40.00	12x6	35.00	43.00
12x8	32.00	40.00	12x8	35.00	43.00
15x6	75.00	90.00	15x6	85.00	100.00
15x8	75.00	90.00	15x8	85.00	100.00

No. G-61

Washington Y Thimbles

Size.....inches	4	5	6	8
Extra Heavy...each	$2.10	2.35	2.60	9.00

Arlington County Thimbles

Thimbles made in accordance with Arlington County specifications can be furnished. Prices on application.

Soil Pipe T Saddles and T Saddle Hubs

No. SP-159
T Saddles

No. SP-160
T Saddle Hubs

Size Inches	Price, Each Stand-ard	Price, Each Extra Heavy	Size Inches	Price, Each Stand-ard	Price, Each Extra Heavy
2x2	$.75	$.95	5x4	$1.00	$1.25
3x2	.80	1.00	5x5	1.00	1.25
3x3	.80	1.00	6x2	1.00	1.25
4x2	.80	1.00	6x3	1.00	1.25
4x3	.90	1.10	6x4	1.00	1.25
4x4	.90	1.10	6x5	1.05	1.30
5x2	.90	1.10	6x6	1.15	1.40
5x3	.95	1.15	...	....	....

Y and Half Y Soil Pipe Saddle Hubs

No. SP-161
Y Hubs

No. SP-162
Half Y Hubs

Size Inches	Price, Each Stand-ard	Price, Each Extra Heavy	Size Inches	Price, Each Stand-ard	Price, Each Extra Heavy
2x2	$.80	$1.00	5x4	$1.05	$1.30
3x2	.90	1.10	5x5	1.05	1.30
3x3	.90	1.10	6x2	1.15	1.40
4x2	.90	1.10	6x3	1.15	1.40
4x3	.95	1.15	6x4	1.15	1.40
4x4	.95	1.15	6x5	1.25	1.55
5x2	.95	1.15	6x6	1.25	1.55
5x3	1.00	1.25	...	....	....

Connolly T Saddle Hubs

No. SP 177

Size In.	Std. Each	Ex. Hy. Each	Size In.	Std. Each	Ex. Hy. Each	Size In.	Std. Each	Ex. Hy. Each
2x2	$.75	$.95	4x4	$.90	$1.10	6x2	$1.00	$1.25
3x2	.80	1.00	5x2	.90	1.10	6x3	1.00	1.25
3x3	.80	1.00	5x3	.95	1.15	6x4	1.00	1.25
4x2	.80	1.00	5x4	1.00	1.25	6x5	1.05	1.30
4x3	.90	1.10	5x5	1.00	1.25	6x6	1.15	1.40

Connolly Y Saddle Hubs

No. SP 178

Size In.	Std. Each	Ex. Hy. Each	Size In.	Std. Each	Ex. Hy. Each	Size In.	Std. Each	Ex. Hy. Each
2x2	$.80	$1.00	4x4	$.95	$1.15	6x2	$1.15	$1.40
3x2	.90	1.10	5x2	.95	1.15	6x3	1.15	1.40
3x3	.90	1.10	5x3	1.00	1.25	6x4	1.15	1.40
4x2	.90	1.10	5x4	1.05	1.30	6x5	1.25	1.55
4x3	.95	1.15	5x5	1.05	1.30	6x6	1.25	1.55

Sisson Insertable Joints

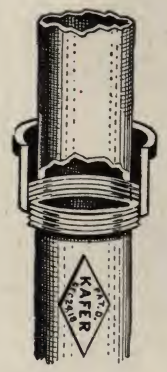
No. SP253

Size Inches	Std. Each	Ex. Hy. Each
2	$1.40	$1.50
3	1.50	1.70
4	1.80	2.00
5	2.10	2.30
6	2.60	2.80
8	9.00	10.00

With this joint a satisfactory connection can be made when a leak is discovered in a pipe or fitting already connected; or if a new fixture is to be connected with a line of pipes already in.

To install, cut out of soil pipe the length of fitting required to insert plus 11½ inches for this joint. Slip the lead ring over the pipe above and push the joint up as far as possible and drop this joint down. The lead ring will drop into joint and rest upon shoulders. Insert packing.

No. 167 Kafer Insertable Joints

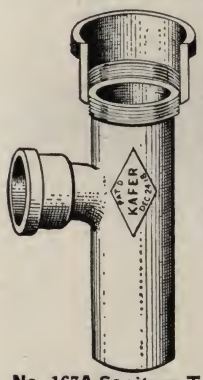


Stops wedging and forcing the soil line. Simply unscrew the bell, slip the joint in the line, slip the bell over the top piece of soil pipe, screw down and caulk.

Makes an absolutely tight connection.

2-inch Size	each	$2.42
3-inch Size	each	2.64
4-inch Size	each	3.08
5-inch Size	each	3.74
6-inch Size	each	4.52
8-inch Size	each	14.86

Kafer Insertable Soil Fittings

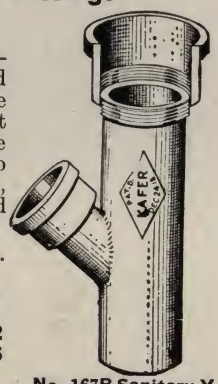


No. 167A Sanitary T

The Kafer method is practical and simple, unscrew the hub, insert the joint in the line, slip the hub over the top piece of soil pipe, screw down and caulk.

Size hub, 4 inches.

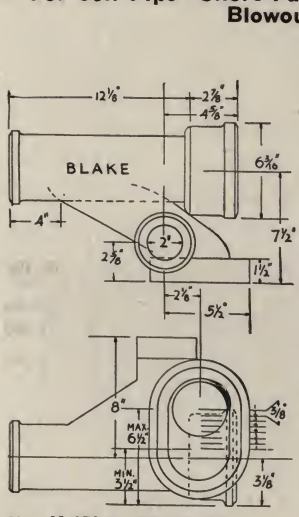
No.	Size Outlet In.	Price Each
167A	2	$3.52
167B	4	3.96



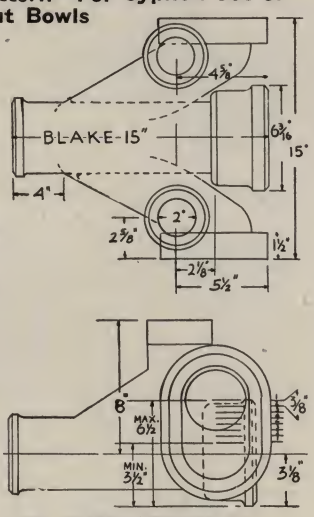
No. 167B Sanitary Y

Blake TY Type Wall Hung Closet Fittings

For Soil Pipe—Short Pattern—For Syphon Jet or Blowout Bowls



No. K-151½, Single TY



No. K-152½, Double TY

For use with syphon jet bowls to match low outlet in such closets, and thereby accommodate a maximum of ten bowls in a row; but they are just as adaptable to blowout closets if installation is made with all of one kind of these fittings.

Fittings may be tapped either 5/16 or 3/8-inch centers. Single fittings made either right or left-hand thread. Iron pipe tappings either 3 or 4-inch, straight threads, not pitched.

No.	Plain Each	Galv. Each	Description	Wt. Lbs.
K-151½	$14.00	$19.00	4-In. Sgl. Fitting for Soil Pipe	40
K-152½	26.00	34.00	4-In. Dbl. Fitting for Soil Pipe	68

Cast Iron Soil Pipe Fittings

Cleanout Tees

No. SP-242
Trap Screw on Main

No. SP-243
Trap Screw on Branch

Size Inches	Each Std.	Each Ex. Hy.	Size Inches	Each Std.	Each Ex. Hy.
2	$1.50	$1.85	2	$1.50	$1.85
3	1.95	2.45	3	1.70	2.15
4	2.45	3.05	4	1.70	2.15
5	4.30	5.40	5	3.25	4.00
6	4.90	6.15	6	3.70	4.60

Cleanout Y's

No. SP-244
Trap Screw on Main

No. SP-245
Trap Screw on Branch

Size Inches	Each Std.	Each Ex. Hy	Size Inches	Each Std.	Each Ex. Hy.
2	$1.50	$1.85	2	$1.50	$1.85
3	1.95	2.45	3	1.95	2.45
4	2.45	3.05	4	2.45	3.05
5	4.30	5.40	5	4.30	5.40
6	4.95	6.15	6	4.95	6.15

Combination Y and Eighth Bend

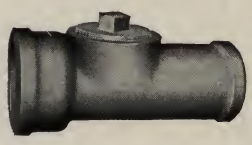
No. SP-246

Trap Screw on Main

Size Inches	Each Std.	Each Ex. Hy.
2	$1.85	$2.30
3	2.45	3.05
4	3.10	3.85
5	4.95	6.15
6	6.15	7.70

No. 37 Asco Cast Iron Test Tees

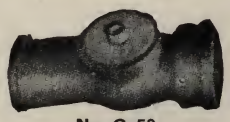
Regular Pattern—Standard or Extra Heavy



With square head brass plug. Will admit test plug.

Size.....in.	2	3	4	5	6
No. 37....ea.	$1.40	1.80	2.10	5.50	6.70
I.P. Open..in.	2	3	3½	4½	6
Wt.....lb.	7	10½	15	22	25

Washington Test Tees



No. G-58

Size Inches	Cleanout I. P. Size Inches	With Brass Plug Std. Each	With Brass Plug Ex. Hvy. Each	With Iron Plug Std. Each	With Iron Plug Ex. Hvy. Each	Without Plug Std. Each	Without Plug Ex. Hvy. Each
2	2	$2.75	$3.00	$1.65	$1.90	$1.25	$1.50
3	4	3.40	3.75	1.65	2.00	1.40	1.75
4	4	3.85	4.25	2.10	2.50	1.70	2.10
5	5	5.00	5.50	3.25	3.75	2.40	2.90
6	6	7.25	8.00	4.25	5.00	3.05	3.80
8	8	....	16.25	....	11.00	....	....

Josam Side-Swing Backwater Sewer Valves

A backwater sewer valve with supersensitive side swing control. Protects property, equipment and supplies against backwater from excessive rainfall, flood conditions, tidewater and inadequate sewer carry-off.

Cast iron housing, black lacquered. Hub and spigot or female and male threaded connection for use with tile sewer pipe or with machine faced and drilled flanged ends.

Extensions of various heights can be furnished for raising cleanout cover to floor line.

Series 1170—With Bolted Cleanout Cover

Type	Hub Inlet Spigot Outlet Each	With Flanged Ends Each	Inlet and Outlet Inches	Diam. Clean-out Inches	Length Inches	Height Inches
1173	$12.50	$17.50	3	4¼	13½	5½
1174	17.50	24.50	4	5⅜	14	5⅞
1175	26.00	36.40	5	6⅜	16⅝	6⅝
1176	30.00	42.00	6	8⅜	20	8⅜
1178	50.00	70.00	8	10⅛	23¾	11
Series 1180—With Brass Cleanout Plug						
1183	$19.50	$27.30	3	4	13½	5½
1184	24.00	33.60	4	5	14½	5⅞
1185	40.00	56.00	5	6	16¾	6⅝
1186	44.00	61.60	6	8	20	8⅜
1188	66.00	92.40	8	10	23¾	11

No. E-2 Palmer Improved Sewer Gas and Back Water Traps

Bolted or Screwed Cover

Size Inches	Complete Each	Size Inches	Complete Each	Size Inches	Complete Each
2	$6.60	5	$14.30	10	$77.00
3	7.70	6	16.50	12	104.50
4	8.30	8	40.00	..	.....

No. E-1 Palmer Sewer Valves

With Handhole and Cover

Size In.	Price Each	Size In.	Price Each
2	$5.50	6	$12.00
3	7.00	8	28.00
4	7.60	10	48.00
5	11.00	12	64.00

No. D-6 Palmer Old Style Valves

For Cast Iron or Tile Pipe

Size In.	Each	Size In.	Each
2	$1.44	8	$8.00
3	1.80	9	20.00
4	2.20	10	34.00
5	3.10	12	48.00
6	3.30	15	60.00

No. 214 Plain Closet Bends with Slip Collars

Size Inches	Each	Size Inches	Each
4x4x12	....	4x 6x12	....
4x4x14	....	4x 6x15	....
4x4x15	....	4x 6x18	....
4x4x18	....	4x10x18	....
4x4x24	....	.....	....

Washington Closet Bends with Collars

Extra Heavy

Tapped with Y inlet.

No. 221

No. 221 Size Inches	Tapped Inches	Location	Each	No. 222 Size Inches	Tapped Inches	Location	Each
4x6x16	Plain	.....	....	4x16x16	Plain	.....	....
4x6x16	1½	Right	....	4x16x16	1½	Right	....
4x6x16	1½	Left	....	4x16x16	1½	Left	....
4x6x16	1½	R.&L.	....	4x16x16	1½	R.&L.	....
4x6x16	2	Right	....	4x16x16	2	Right	....
4x6x16	2	Left	....	4x16x16	2	Left	....
4x6x16	2	R.&L.	....	4x15x16	2	R.&L.	....

Tapped Closet Bends with Slip Collars

No. 215
Tapped Left Hand

No. 216
Tapped Right Hand

Closet bends tapped 1½ or 2 inches on the side with 2½ inch slip collars.

Size.....inches	4x4x12	4x4x14	4x4x15	4x4x18	4x4x24
Each.....	.....	.....	.....	.....	.....

No. 220 Closet Bends with Slip Collars

With 1½ or 2 inch Y Tappings Both Sides

No. 220, Size 4x4½x15 Inches.....each ....

Closet Floor Flanges and Slip Collars

No. 218
Flange

No. 218 Closet Floor Flanges

Size.....in. 4x2½
Each..... .....

No. SP219 Slip Collars

Slip collars for 4-inch closet.

No. SP 219
Slip Collar

Size..inches	1	1½	1¾	2	2½	3	4	5	6
Each.....	...	...	...	...	...	...	...	...	...

Apexo Adjustable Roof Flashings

Galvanized Iron, Copper or Lead

Galv. Iron or Copper

Adjustable from flat to 45 degrees.

Made of 24-gage galvanized iron, 14-ounce cold rolled copper or cast lead.

Base of 4-inch size is 13x15 inches. Sleeve of 4-inch is 3 inches high. Base, 18x18 inches is also available.

Base of lead flashing is 3/32 inch thick. Sleeve is ⅛ inch thick. Base of 4-inch size is 12x14 inches. Sleeve of 4-inch is 2½ inches high in front and 3¾ inches in back.

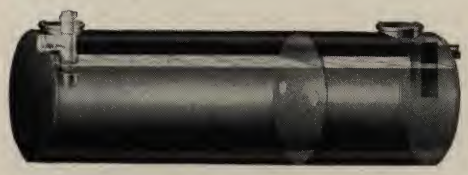
All other base sizes in proportion.

Size.....in.	1¼	1½	2	2½	3	4	5
Galv. Iron..doz.	$8.00	8.00	10.00	11.00	11.50	12.00	17.00
Copper....doz.	$15.00	15.60	18.00	19.20	20.40	24.00	36.00
Cast Lead..doz.	$15.00	15.60	18.00	19.20	20.40	24.00	36.00

San-Equip Master Septic Tanks

Horizontal Type

Nos. 903 and 904



Nos. 905 to 940

Provides safe, dependable disposal service for homes, schools, factories, parks, etc. Has improved intake, longer flow of sewage within the tank, simplicity of installation, and is free from service interruptions. Approved by health officials as standard equipment for unsewered districts.

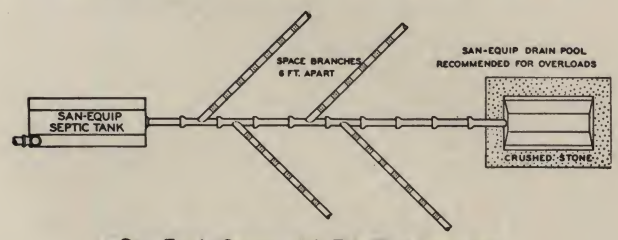
Made of rust-resisting, copper-bearing steel, protected inside and out with a heavy coating of mineral asphalt. Nos. 903 to 905, 14 gage; Nos. 910 and 915, 12 gage; and larger sizes, 7 gage.

No.	Working Capacity Gallons	No. of People *Home	School	Factory	Dimensions	Ship. Weight Pounds
903	250	4 to 7	15	12	48"x34"x44"	280
904	350	7 to 10	20	20	66"x34"x44"	360
905	500	10 to 20	40	35	52"x5'	425
910	1000	20 to 40	80	70	52"x10'	925
915	1500	40 to 75	120	105	52"x15'	1300
920	2000	75 to 100	165	140	68"x11'8"	2400
925	2500	100 to 125	210	175	68"x14'7"	2850
930	3000	120 to 150	250	200	68"x17'6"	3300
935	3500	140 to 175	290	235	68"x20'5"	3750
940	4000	160 to 200	330	270	68"x23'4"	4200

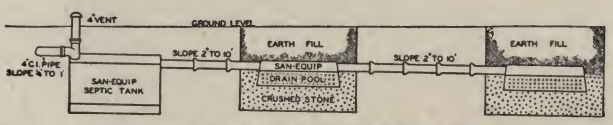
*Lower figures in home ratings column are recommended by health officials for most satisfactory service. In no instance, even for temporary use, should maximum ratings be exceeded.

Prices upon request.

San-Equip System Installation Plans



San-Equip Septic with Tile Pipe Drainage



San-Equip Master Tank with Drain Pools

San-Equip Septic Tanks

Vertical Type

The Longer Flow of Sewage, Indicated by Arrows, Insures Better Septic Action and Safer Disposal

Provides satisfactory service for use where modern plumbing would otherwise be impossible.

The intake and outlet opening baffles are designed to direct the flow of sewage within the tank to take full advantage of the entire working capacity. The resulting longer travel insures more thorough treatment and a clearer effluent.

Made of 14 gage copper alloy steel, rust-proofed inside and out with mineral asphalt. Openings take 4-inch pipe.

No.	Each	Working Cap. Gals.	No. of People *Home	School	Factory	Diam. In.	Depth In.	Ship. Wt. Lbs.
802	.....	200	4 to 6	15	12	38	48	220
803	.....	300	6 to 9	25	20	46	48	285
805	.....	500	10 to 18	35	30	52	60	390

*Lower figures in home ratings column are recommended by health officials for most satisfactory service.

Maximum ratings shown should not be exceeded, even for temporary use.

San-Equip Siphon Septic Tanks

An improved septic tank with built-in siphon discharge unit. Siphon discharges at 4 to 8-hour intervals in sufficient volume to distribute effluent equally over entire filter field. Periods of rest between discharges improve absorption and speed final disposal.

Equipped with improved top intake and full partition separating treatment and siphon chambers. Volume of siphon discharge can be varied on order to meet special requirements. Nos. 703 and 707 take 4 inch sanitary T at intake; No. 710, 6 inch. All outlets take 4 inch pipe.

Made of asphalt coated, copper-bearing iron with cast iron siphon.

No.	Each	Net Gal.	Siphon Discharge Gal.	No. of People Home	School	Factory	Dimensions In.	Ship. Wt. Lbs.
703	....	240	60	7	15	12	48x48	400
705	....	350	80	12	25	20	52x60	495
707	....	550	120	25	50	40	52x90	595
710	....	750	160	40	75	60	52x120	1025

Robinson Vitrified Clay Septic Tanks

Complete, sanitary, odorless disposal of sewage and household wastes. Recommended by public health authorities.

Entire system operates as one unit because of the location of the openings between each section. This feature, plus the length of flow which is possible within the tank, assures complete disintegration of the solids.

Made of salt-glazed vitrified clay, which is permanent because it resists all corrosion and provides a dense, impervious surface. It will not rust, corrode or deteriorate underground. Separate covers, for each unit, are provided.

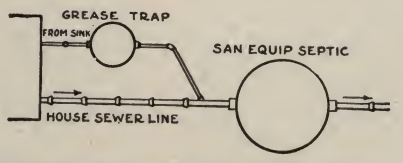
System can be enlarged, after installation, for future needs.

Standard Systems

No.	Net Working Capacity Gal.	Total Capacity Gal.	No. of People *Home	Factory	School	Lgth. In.	Width In.	Ht. In.	Approx. Wt. Lb.
2	200	232	Up to 5	12	15	54	27	48	1250
3	300	342	5 to 8	20	25	81	27	48	1875
4	400	456	8 to 10	25	30	108	27	48	2400
5	500	570	10 to 15	30	35	135	27	48	2975
			Parallel Systems						
40	400	456	8 to 10	25	30	54	54	48	2400
60	600	685	15 to 20	35	45	81	54	48	3550
80	800	913	20 to 30	50	60	108	54	48	4700
100	1000	1141	30 to 40	70	80	135	54	48	5850

*Lower figures are recommended by health officials for most satisfactory service.

San-Equip Grease Traps



For use with San-Equip Septic Systems in hotels, restaurants, or wherever there is a large amount of grease and kitchen waste. Reduces possibility of overloading or clogging septic systems. Easily installed as shown. Requires occasional skimming. Made of copper-bearing iron, rust-proofed by a heavy coating of mineral asphalt. Standard openings 2-in. threaded couplings. Openings for 4-in. soil pipe furnished if specified.

No. GT**40**, 40 Gals., Size 22½x24 In.....each **$13.00**
No. GT**60**, 60 Gals., Size 22½x36 In.....each **17.50**

Robinson Sanitary Septic Tanks

An underground system suitable for suburban homes, schools, farms, and many other purposes. Self-operating, durable, and free from odors. Made of imperishable salt-glazed vitrified clay with burned-in baffles. Tank is made in two sections: the top section contains the necessary baffles; the bottom section consists of a standard length of sewer pipe which supports the top section.

A septic tank consists of two or more units of tanks, the number of units being dependent upon the number of persons in the household. Tables shown below.

No. of Feet of 4-In. Drain Tile Required in Disposal Field

No. Persons Using System...	Up to 7	7–10	10–16	16–25
In Sandy Soil.....feet	80	100	160	250
In Medium Soil.....feet	100	140	250	310
In Heavy Clay Soil.....feet	210	250	650	810

Standard Systems

Top and bottom sections are each 24 inches i.d. and 24 inches high.

Weight: top section, 260 lb.; bottom section, 290 lb.

No.....	**2**	**3**
No. of Tanks.....	2	3
Size Tank.....inches	24x48	24x48
No. of Persons Using System:		
Home.....	7	7–10
Factory.....	10	15
School.....	14	20

Super Systems

Top and bottom sections are each 30 inches i.d. and 36 inches high.

Weight: top section, 690 lb.; bottom section, 720 lb.

No.....	**2**	**3**
No. of Tanks.....	2	3
Size Tank.....inches	30x72	30x72
No. of Persons Using System:		
Home.....	10–16	16–25
Factory.....	25	40
School.....	30	50

No. 180 San-Equip Drain Pools

The San-Equip Drain Pool is a correctly designed seepage pool that furnishes the most satisfactory and economical septic drainage under average soil conditions. Perforations around the sides plus the open bottom provide a larger seepage area than the ordinary leaching pool. Drainage is kept nearer the surface of the ground where soil conditions are usually best for final disposal.

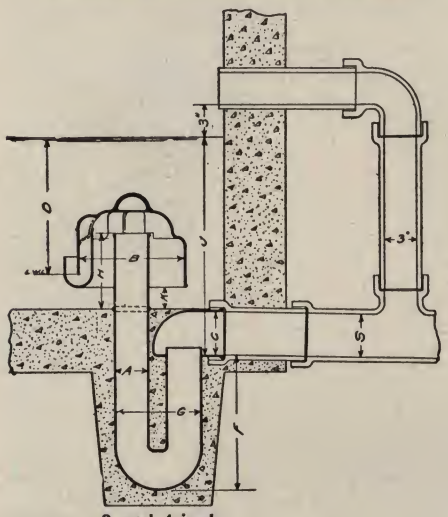
The Drain Pool is a complete unit, easily installed in a limited space with a saving in labor and materials otherwise required. It is equivalent to approximately 120 feet of 4 inch drain tile when installed according to instructions.

For use with large size septic tanks two or more pools can be installed to provide sufficient drainage.

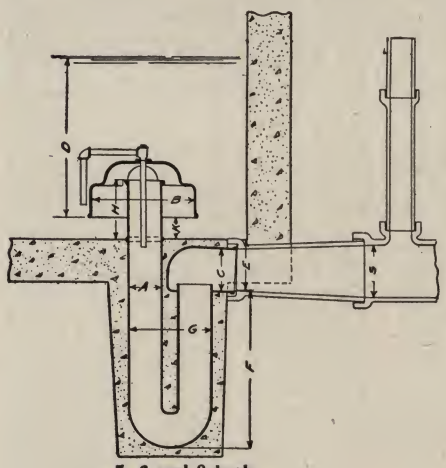
Made of asphalt-coated, 14-gage copper-bearing steel.

No. **180**.....each **$13.00**
Length.....inches **66**
Width.....inches 32
Height.....inches 16½
Shipping Weight.....pounds 95

Miller Automatic Syphons



3 and 4-inch

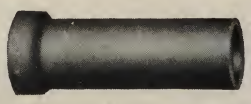


5, 6 and 8-inch

Regardless of whether sub-soil irrigation method is used for a secondary treatment or whether a small filter bed is constructed, it is necessary to provide some preliminary form of treatment which is generally a settling tank. Sewage from house is delivered into settling tank, purpose of tank being to permit settling out of solid matters. Means for preventing solids from leaving settling tank should be provided. Liquid should pass on to a second compartment called a dosing tank in which should be a syphon to intermittently discharge contents of dosing tank into sub-soil tile or whatever secondary type of treatment is used. It is not desirable to permit sewage to flow directly from settling tank to subsoil tile. If it does, filtering material surrounding tile will be constantly saturated in places and eventually will become clogged and foul. Intermittent discharge permits of filtering material resting after each application of sewage. Five to 15 persons use 3-inch syphon; 16 to 40 use 4-inch; 41 to 100 use 5-inch; 101 to 200 use 6-inch; 201 to 1000 use 8-inch syphon.

Diam. Syphon, A.in.	3	3	4	4	5	6	8
" Bell, B... "	10	10	12	12	15	19	24
" Disc. Head, C. "	4	4	4	4	6	8	10
Drawing Depth, D.. "	13	15	14	17	23	30	35
Invert below Floor. "	....	....	....	....	7½	10	12
Depth Trap, F... "	12	12	13	13	22	29	33
Width " G.. "	10	10	12	12	14	16	22½
Ht. Above Floor, H.... "	7¼	9¼	8¾	11¾	9½	11	13½
Clearance Under Bell, K. "	2	2	2	2	3	4	5
Diam. Carrier, S. "	4	4	4–6	4–6	6–8	8–10	12–15
Invert to Dis. Line, J .. "	20½	22½	22¾	25¾	....	....	....
Av. Disc. per Second. cu. ft.	.16	.17	.35	.37	.73	1.06	2.12

Salt-Glazed Vitrified Clay Sewer Pipe



Highly resistant to the action of acids, and therefore unaffected by industrial wastes, ground water, and the hydrogen sulphide gas and acid combinations commonly found in sewers.

Made from carefully selected pure shale, and mixtures of shale and fire clay. Burning is done with great care, to insure thorough vitrification, the firing being controlled through use of pyrometers and pyrometric cones.

Single Strength Pipe

Manufacturers' Standard

Internal Diam. In.	Per Foot	Laying Lgth. Ft.	Depth of Socket, Inches Mfrs. Std.	Depth of Socket, Inches Depth & Width	Internal Socket Diameter ½" Above Base, In. Mfrs. Std.	Internal Socket Diameter ½" Above Base, In. Depth & Width	Thickness of Barrel In.	Lin. Ft. to Minimum Carload	Approx. Wt. Lb. per Ft.
3	$.30	2	1½	...	4½	...	½	5200	5
4	.30	2	1¾	2	5¾	6	½	3470	7½
5	.45	2	1¾	2½	7¼	7½	⅝	2360	11
6	.45	2,3	2¼	2½	8¼	8½	⅝	2000	13
8	.70	2,3	2½	2¾	10½	10¾	¾	1300	20
10	1.05	2,3	2½	2¾	12¾	13	⅞	870	30
12	1.35	2,3	2¾	3	15⅛	15¼	1	615	42½
15	1.80	2,3	2½	3	18½	18½	1⅛	435	60
18	2.50	2,3	2¾	3¼	21¾	21¾	1¼	325	80
20	3.00	2,3	3	3½	24	24	1⅜	260	100
21	3.50	2,3	3	3⅝	25⅜	....	1½	235	112
22	4.00	2,3	3	3¾	26⅜	....	1½	215	122
24	4.50	2,3	3¼	4	28½	28½	1⅝	190	140
27	6.50	3	4	4	32½	32½	2	135	195
30	7.20	3	4	4	35¾	35¾	2⅛	115	230
33	9.00	3	5	5	40	40	2¼	90	300
36	10.25	3	5	5	43½	43½	2½	75	350

Double Strength Pipe

Conforming to the Std. Spec. C-13-35 of the A.S.T.M.

Internal Diam. In.	Per Foot	Laying Lgth. Ft.	Depth of Socket, Inches A.S.T.M.	Depth of Socket, Inches Depth & Width	Internal Socket Diameter ½" Above Base, In. A.S.T.M.	Internal Socket Diameter ½" Above Base, In. Depth & Width	Thickness of Barrel In.	Lin. Ft. to Carload	Approx. Wt. Lb. per Ft.
4	$.30	2	1¾	2	5¾	6	½	3470	7½
*5	.45	2	1¾	2½	7¼	7½	⅝	2360	11
6	.45	2,3	2¼	2½	8¼	8½	⅝	2000	13
8	.70	2,3	2½	2¾	10½	10¾	¾	1300	20
10	1.05	2,3	2½	2¾	12¾	13	⅞	870	30
12	1.35	2,3	2¾	3	15⅛	15¼	1	615	42½
15	1.80	2,3	2¾	3	18¾	18¾	1¼	360	70
18	2.50	2,3	3	3¼	22¼	22¼	1½	260	100
*20	3.00	2,3	3	3½	24½	24½	1⅝	210	125
21	3.50	2,3	3¼	3⅝	25⅞	25¾	1¾	190	135
*22	4.00	2,3	3⅜	3¾	27	27	1⅞	170	155
24	4.50	2,3	3⅜	4	29⅜	29¼	2	150	175
27	6.50	3	3½	4	33⅛	33	2¼	125	215
30	7.20	3	3½	4	36⅝	36½	2½	95	275
33	9.00	3	4	5	40	40¾	2⅝	80	340
36	10.25	3	4	5	43¼	44	2¾	70	390

Triple Strength Pipe

Internal Diam. In.	Per Foot	Laying Lgth. Ft.	Depth of Socket In.	Internal Diam. of Socket ½" from Base In.	Thickness of Barrel In.	Lin. Ft. to Carload	Approx. Wt. Lb. per Ft.
12	$1.35	2,3	2¾	15¾	1¼	440	57
15	1.80	2,3	2¾	19½	1⅝	280	90
18	2.50	2,3	3	23	1⅞	200	126
24	4.50	2,3	3⅜	30⅜	2½	110	230

*Not included in A.S.T.M. Spec. C-13-35.

Minimum taper of socket, 1:20. Thickness of socket (½ inch from end) not less than three-fourths of barrel thickness.

Standard Sewer Pipe Fittings

Single and Double Y and T Branches

T Branch

Y Branch

Double T Branch

Double Y Branch

Size Inches	Y's & T's Length, Feet 2 Each	Y's & T's Length, Feet 3 Each	Dbl. Y's & T's Length, Feet 2 Each	Dbl. Y's & T's Length, Feet 3 Each
3x 3	$1.20	....	$2.40	....
4x 3	1.20	....	2.40	....
4x 4	1.20	....	1.50	....
*5x 3	2.25	....	3.60	....
5x 4	1.80	....	2.25	....
5x 5	1.80	....	3.60	....
*6x 3	2.25	....	3.60	....
6x 4	1.80	$2.25	2.25	$2.70
6x 5	1.80	2.25	2.25	2.70
6x 6	1.80	2.25	3.60	4.05
*8x 3	3.50	4.20	5.60	6.30
8x 4	2.80	3.50	5.60	6.30
8x 5	2.80	3.50	3.50	4.20
8x 6	2.80	3.50	3.50	4.20
*8x 8	3.50	4.20	5.60	6.30
*9x 4	4.20	5.25	8.30	9.45
*9x 5	4.20	5.25	8.40	9.45
*9x 6	4.20	5.25	8.40	9.45
*9x 8	4.20	5.25	8.40	9.45
*9x 9	5.25	6.30	8.40	9.45
10x 4	4.20	5.25	8.40	9.45
10x 5	4.20	5.25	8.40	9.45
10x 6	4.20	5.25	8.40	9.45
10x 8	4.20	5.25	8.40	9.45
*10x10	5.25	6.30	8.40	9.45
12x 4	5.40	6.75	10.80	12.15
12x 5	5.40	6.75	10.80	12.15
12x 6	5.40	6.75	10.80	12.15
12x 8	5.40	6.75	10.80	12.15
*12x 9	....	....	10.80	12.15
*12x10	6.75	8.10	10.80	12.15
*12x12	6.75	8.10	10.80	12.15
15x 4	7.20	9.00	14.40	16.20
15x 5	7.20	9.00	14.40	16.20
15x 6	7.20	9.00	14.40	16.20
15x 8	7.20	9.00	14.40	16.20
*15x 9	....	....	....	....
15x10	7.20	9.00	14.40	16.20
*15x12	9.00	10.80	14.40	16.20
*15x15	....	16.20	....	18.00
18x 4	10.00	12.50	20.00	22.50
18x 5	10.00	12.50	20.00	22.50
18x 6	10.00	12.50	20.00	22.50
18x 8	10.00	12.50	20.00	22.50
*18x 9	....	....	....	....
18x10	10.00	12.50	20.00	22.50
18x12	10.00	12.50	20.00	22.50
*18x15	....	22.50	....	25.00

Size Inches	Y's & T's Length, Feet 2 Each	Y's & T's Length, Feet 3 Each	Y's & T's Length, Feet 3½ Each	Dbl. Y's & T's Length, Feet 2 Each	Dbl. Y's & T's Length, Feet 3 Each
*18x18	....	$22.50	....	....	....
20x 4	$12.00	15.00	....	$24.00	$27.00
20x 5	12.00	15.00	....	24.00	27.00
20x 6	12.00	15.00	....	24.00	27.00
20x 8	12.00	15.00	....	24.00	27.00
20x10	12.00	15.00	....	24.00	27.00
20x12	12.00	15.00	....	24.00	27.00
*20x15	....	27.00	....	....	30.00
*20x18	....	27.00	....	....	....
21x 4	14.00	17.50	....	28.00	31.50
21x 5	14.00	17.50	....	28.00	31.50
21x 6	14.00	17.50	....	28.00	31.50
21x 8	14.00	17.50	....	28.00	31.50
21x10	14.00	17.50	....	28.00	31.50
21x12	14.00	17.50	....	28.00	31.50
*21x15	....	31.50	....	....	35.00
*21x18	....	31.50	....	....	....
22x 4	16.00	20.00	....	32.00	36.00
22x 5	16.00	20.00	....	32.00	36.00
22x 6	16.00	20.00	....	32.00	36.00
22x 8	16.00	20.00	....	32.00	36.00
22x10	16.00	20.00	....	32.00	36.00
22x12	16.00	20.00	....	32.00	36.00
*22x15	....	36.00	....	....	40.00
*22x18	....	36.00	....	....	....
24x 4	18.00	22.50	....	36.00	40.50
24x 5	18.00	22.50	....	36.00	40.50
24x 6	18.00	22.50	....	36.00	40.50
24x 8	18.00	22.50	....	36.00	40.50
24x10	18.00	22.50	....	36.00	40.50
24x12	18.00	22.50	....	36.00	40.50
*24x15	....	40.50	....	....	45.00
*24x18	....	40.50	....	....	45.00
*24x20	....	40.50	....	....	....
*24x21	....	40.50	....	....	....
27x 5	....	32.50	....	....	52.00
27x 6	....	32.50	....	....	52.00
27x 8	....	32.50	....	....	52.00
27x10	....	32.50	....	....	52.00
27x12	....	32.50	....	....	52.00
27x15	....	39.00	....	....	65.00
*27x18	....	58.50	....	....	65.00
*27x20	....	58.50	....	....	65.00
*27x21	....	58.50	....	....	65.00
*27x22	....	58.50	....	....	65.00
*27x24	....	....	$65.00	....	....
30x 5	....	36.00	....	....	57.60
30x 6	....	36.00	....	....	57.60

Size Inches	Y's & T's Length, Feet 3 Each	Y's & T's Length, Feet 3½ Each	Y's & T's Length, Feet 4 Each	Dbl. Y's & T's Length, Feet 3 Each	Dbl. Y's & T's Length, Feet 3½ Each
30x 8	$36.00	....	....	$57.60	....
30x10	36.00	....	....	57.60	....
30x12	36.00	....	....	57.60	....
30x15	43.20	....	....	72.00	....
*30x18	64.80	....	....	72.00	....
*30x20	64.80	....	....	72.00	....
*30x21	64.80	....	....	72.00	....
*30x22	64.80	....	....	72.00	....
*30x24	....	$72.00	....	....	$79.20
33x 5	45.00	....	....	72.00	....
33x 6	45.00	....	....	72.00	....
33x 8	45.00	....	....	72.00	....
33x10	45.00	....	....	72.00	....
33x12	45.00	....	....	72.00	....
33x15	54.00	....	....	90.00	....
*33x18	81.00	....	....	90.00	....
*33x20	81.00	....	....	90.00	....
*33x21	81.00	....	....	90.00	....
*33x22	81.00	....	....	90.00	....
*33x24	....	90.00	....	....	99.00
36x 5	51.25	....	....	82.00	....
36x 6	51.25	....	....	82.00	....
36x 8	51.25	....	....	82.00	....
36x10	51.25	....	....	82.00	....
36x12	51.25	....	....	82.00	....
36x15	61.50	....	....	102.50	....
*36x18	92.25	....	....	102.50	....
*36x20	92.25	....	....	102.50	....
*36x21	92.25	....	....	102.50	....
*36x22	92.25	....	....	102.50	....
*36x24	....	102.50	....	....	112.75
*20x20	27.00	....	....	....	....
*21x20	31.50	....	....	....	....
*21x21	31.50	....	....	....	....
*22x20	36.00	....	....	....	....
*22x21	36.00	....	....	....	....
*22x22	36.00	....	....	....	....
*24x22	40.50	....	....	....	....
*24x24	....	45.00	....	....	....
*27x27	....	....	$65.00	....	....
*30x27	....	....	72.00	....	....
*30x30	....	....	72.00	....	....
*33x27	....	....	90.00	....	....
*33x30	....	....	90.00	....	....
*36x27	....	....	102.50	....	....
*36x30	....	....	102.50	....	....

V Branches

V branches take ten times the list price of 1 foot of pipe of the same size.

Reverse Y's

Reverse Y's take same price as regular Y's.

*Special fittings; take a higher list price than standard fittings.

Stoppers and Strainers

Stopper

Strainer

For Pipe Diam. In.	†Stoppers Each	Strainers Each	Approx. O.D. In.
3	$.15	$.30	4
4	.15	.30	5⅛
5	.22½	.45	6¼
6	.22½	.45	7¼
8	.35	.70	9½
10	.52½	1.05	11¾
12	.67½	1.35	14

Stoppers 15 and 18 inch takes 3 times the list price of 1 foot of pipe of same size.

Standard Sewer Pipe Fittings

Curves
30° and 45°

Diam. Inches	Each	Length on Center Line Inches
3	$1.20	12
4	1.20	12
5	1.80	12
6	1.80	12
8	2.80	12
10	5.25	18
12	6.75	18

Cut Curves

8	$2.80	..
10	4.20	..
12	5.40	..
15	7.20	..
18	10.00	..
20	12.00	..
21	14.00	..
22	16.00	..
24	18.00	..
27	26.00	..
30	28.80	..
33	36.00	..
36	41.00	..

Elbows
90°—Molded

3	$1.20	12
4	1.20	12
5	1.80	12
6	1.80	12
8	2.80	12
10	5.25	18
12	6.75	18

Special Long Elbows and Curves

3	$1.80	24
4	1.80	24
5	2.70	24
6	2.70	24
8	4.20	24

Cut Elbows

8	$2.80	..
10	4.20	..
12	5.40	..
15	14.40	..
18	20.00	..
20	24.00	..
21	28.00	..
22	32.00	..
24	36.00	..

Increasers

Size Inches	Each	Length Feet
3x 4	$1.20	1
4x 5	1.80	1
4x 6	1.80	1
5x 6	1.80	1
5x 8	2.80	1
6x 8	2.80	1
8x10	4.20	1

Reducers

4x3	$1.20	1
5x4	1.80	1
6x4	1.80	1
6x5	1.80	1
8x5	2.80	1
8x6	2.80	1
10x8	4.20	1

Increasers or reducers not shown as standard take six times the list price of 1 foot of pipe of larger size.

Hand Hole Traps

Size Inches	Each
3x3	$2.40
4x4	2.40
5x4	3.60
5x5	3.60
6x4	3.60
6x5	3.60
6x6	3.60
8x5	5.60
8x6	5.60

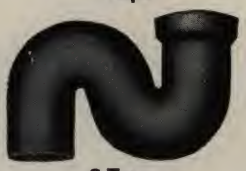
Center Hand Hole Traps

4x4	$2.40
5x4	3.60
5x5	3.60
6x4	3.60
6x5	3.60

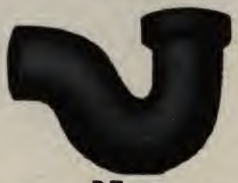
Half Traps or Offsets

5	$3.60
6	3.60
8	5.60

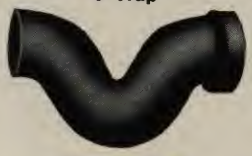
S, P and Running Traps



S Trap



P Trap



Running Trap

Diameter Inches	Each
3	$2.40
4	2.40
5	3.60
6	3.60
8	5.60

Cellar Traps

Size Inches	Without Cover Each
10x4	$15.75
10x6	15.75
12x4	20.25
15x4	27.00
15x6	27.00
18x6	37.50

For cover, add 10%.

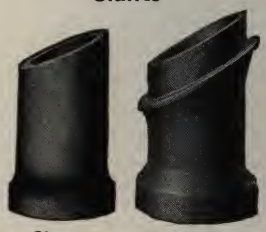
Grease Traps

10x4	$15.00
10x6	15.00
12x4	18.00
12x6	18.00
15x4	24.00
15x6	24.00
18x6	30.00

For cover, add 10%.

Grease traps not shown as standard take fifteen times the list price of 1 foot of pipe of same size.

Slants



Slant — Saddle Hub Slant

Saddle Hub Slant (Buffalo Style)

Saddle

Diameter Inches	Each	Short Side Inches
5	$1.80	4½, 9, 13
6	1.80	4½, 9, 13
8	2.80	9, 13
10	4.20	9, 13
12	5.40	9, 13
15	7.20	9, 13

Slants not listed as standard take six times the list price of 1 foot of pipe of same size.

Saddle hubs or saddle hub slants take four times the list price of 1 foot of pipe same size; 8 inches and under.

Specials

S, P, running, hand hole and center hand hole traps 8 inches and under not shown as standard, take ten times the list price of 1 foot of pipe of same size.

Double hand hole traps 8 inches and under not shown as standard take twelve times list price of 1 foot of pipe of same size.

P, running, and hand hole traps 10 inches in diameter take fifteen times list price of 1 foot of pipe of same size.

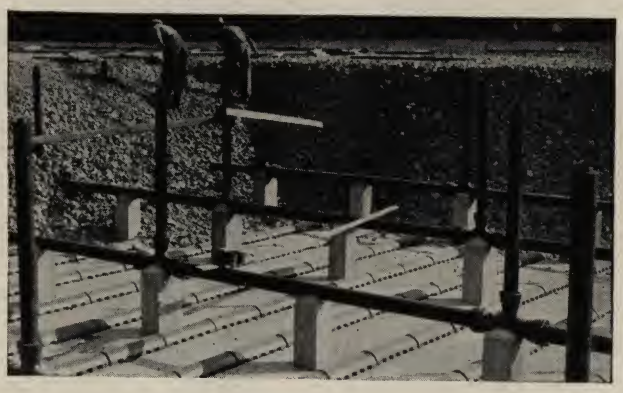
P, running, and hand hole traps 12 inches in diameter take twenty times list price of 1 foot of pipe of same size.

Half traps 10 inches in diameter take ten times the list price of 1 foot of pipe of same size.

Half traps 12 inches in diameter take fifteen times the list price of 1 foot of pipe of same size.

Robinson Slotted Vitrified Clay Channel Pipe

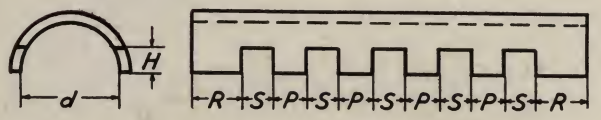
For Filter Underdrains in Sewage Disposal Plants



This pipe combines the added advantage of a circular shaped flow channel with the increased area of openings for ventilation and drainage. Accurate spacing of the slots in relation to the flow line make it possible to complete the filter bed floor before laying the underdrain.

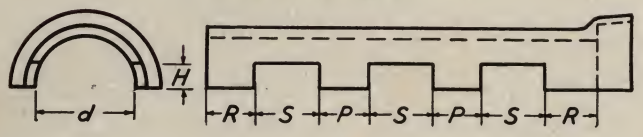
Furnished in 24-foot lengths, and any diameter desired.

Type A, Ring Channel



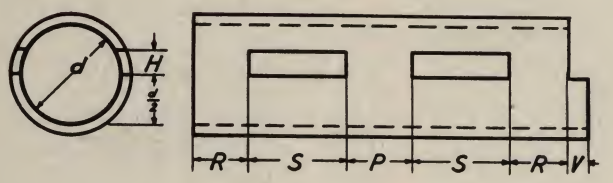
No.	No. of Slots	Dimensions, Inches R	S	P	*H	V
A-0	0	...	...	24	...	...
A-1	1	6	12	...	1½	...
A-2	2	4	6	4	1½	...
A-3	3	3	4	3	1½	...
A-4	4	3	3	2	1½	...
A-5	5	3	2	2	1½	...

Type B, Pipe Channel



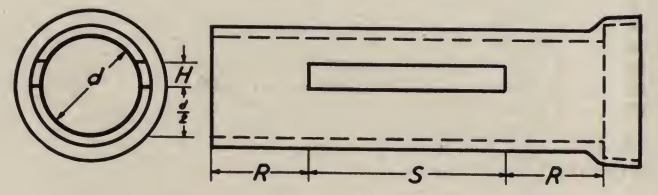
B-0	0	...	...	24	...	...
B-1	1	6	12	....	1½	...
B-2	2	4	6	4	1½	...
B-3	3	3	4	3	1½	...
B-4	4	3	3	2	1½	...
B-5	5	3	2	2	1½	...

Type C, Ring Pipe



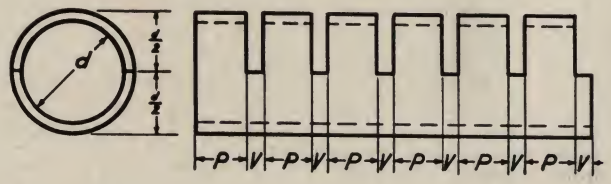
C-1	1	5½	12	....	1½	1
C-2	2	4	6	3	1½	1
C-3	3	3	4	2½	1½	1
C-4	4	2½	3	2	1½	1
C-5	5	2½	2	2	1½	1

Type E, Socket Pipe



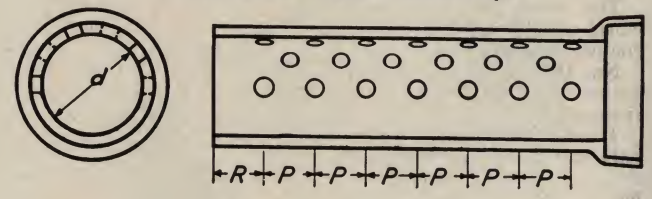
No.	No. of Slots	Dimensions, Inches R	S	P	*H	V
E-1	1	6	12	...	1½	...
E-2	2	4	6	4	1½	...
E-3	3	3	4	3	1½	...
E-4	4	3	3	2	1½	...
E-5	5	3	2	2	1½	...

Type F, Vertical Slot Ring Pipe



F-1	6	...	...	3	d/2	1
F-2	6	...	...	2½	d/2	1½

Type G, Perforated Socket Pipe



G	.	3	..	3⅛	...	...

*Depth of slot shown is standard manufacture; however, this dimension will be dependent on the diameter of the pipe used, size of filtering media, etc., and can be furnished to meet the individual requirements of the design.

Round Unglazed Drain Tile

Drain Tile

T Increaser or Decreaser Y Curve

Resists the chemical action of soils and drainage waters which are of acid or alkaline character. Hard burned, with low absorption, not easily affected by frost; will outlast soft or more porous drain tile.

Drainage is accomplished through the joints and not by seepage through wall of tile.

Size Inches	Length Feet	Weight Pounds per Length	Per 100 Feet	*Fittings Each
3	1	4	$10.00	$1.00
4	1	6	15.00	1.00
5	1	9	20.00	1.40
6	1	12	20.00	1.40
8	2	18	45.00	2.00
10	2	28	70.00	3.60
12	2	36	130.00	4.60
15	2	56	180.00	9.00

*Curves, ⅛ curves, Y's and T's, and increasers or decreasers.

Kennedy Iron Body Floor Stands

Bronze Mounted—Steel Stem

No. 118

No. 119C

Floor stands are used to operate valves or sluice gates from an upper floor and where convenience demands operation from a higher level than that at which the valve is located.

The base of the stand is provided with bolt holes for fastening to its support, and a wheel at the top operates the valve or gate through a suitable coupling and extension stem.

The stands listed are 36 inches high from floor to hand wheel and are ordinarily furnished with painted column and enameled wheel.

No. 118, as shown above, is floor stand with rising stem acting as an indicator. No. 119C is floor stand with non-rising stem and graduated indicator.

The prices given below are for stand, wheel and coupling only and do not include operating or extension stem.

No.	Each	Description
118	$20.00	Stand for Rising Stem Valve
119C	27.00	Stand for Non-Rising Stem Valve, with Indicator
119	20.00	Stand for Non-Rising Stem Valve, without Indicator
....	13.00	Extra for Finishing Rim and Hub of Wheel
....	15.00	Extra for Finishing Upright

Kennedy Indicator Posts and Iron-Body Double-Disc Gate Valves

Iron-Body Bronze-Mounted—With Parallel Seats Non-Rising Stem

Underwriters' Approved National Standard Working Pressures
4-In. to 12-In.: Cold Water, Non-Shock, 175 Pounds
14-In.: Cold Water, Non-Shock, 150 Pounds

No. 54 Bell Ends with No. 70 Valve and No. 541 Post with Operating Wrench

These posts provide a convenient means of operating valves located out of reach on fire protection systems. The vertical type, No. 541, is for valves installed underground, and the horizontal types, Nos. 541A and 541B, are for valves installed behind walls.

The indicator plates have raised letters on a black background for maximum visibility. They are covered with extra-thick glass, and ventilating openings prevent condensation on the glass.

Unless otherwise specified, the post is equipped with an operating nut 1¼ inches square and turning to the left to open. A wrench is provided to permit locking or sealing to a staple on the side of the post when not in use. A lock is extra and furnished only when specified.

When ordering, give the following information:

Number of indicator post;
Number of valve; Size of valve;
Distance from ground line to bottom of pipe.

Indicator posts can be furnished for Kennedy Valves already installed and not designed for connection to a post. In such cases, the following information should be given:

Type of valve; Size of valve;
Kind of end connections;
Distance from ground line to bottom of pipe line; Direction to open.

Indicator posts can also be furnished for any other make of Underwriters'-Approved valve. In such cases, the foregoing information should be given and also the following:

Center of pipe to top of stuffing box flange;
Top of stuffing box flange to top of stem;
Diameter of stuffing box;
Diameter of stuffing box bolt circle;
Size of square operating nut;
Height of operating nut;
Size of stuffing box studs;
Number of stuffing box studs;
Number of turns to open valve.

Valves for use with indicator posts have a flange to which the lower part of indicator post is bolted. This flange is integral with bonnet, and conforms to National Standard dimensions.

Cast iron body with bronze seat rings and brass disc rings. Bonnet, stuffing box, and gland are bronze-bushed.

Bell ends are A.W.W.A. Standard and fit Classes C and D cast-iron pipe. Flanged ends conform to the 125-pound American Cast-Iron Flange Standard (B16a—1928). Screwed ends have American (Briggs) Standard pipe threads.

Size.....inches	4	6	8	10	12	14
No. 541, Vertical (*2-Ft. to 6-Ft. Depth of Trench) or 541A, Horizontal—Post Only ..ea.	$40.00	$40.00	$40.00	$40.00	$40.00	$40.00
No. 541B, Post Only, Angle Type.....each	70.00	70.00	70.00	70.00	70.00	70.00
No. 70, Bell Ends.....each	19.00	32.50	54.00	90.00	125.00	173.00
No. 701, Flanged, Faced, and Drilled.....each	23.00	36.50	58.00	95.00	133.00	181.00
No. 702, Screwed.....each	19.00	32.50	54.00	90.00	125.00	.....
Bell Ends, End to End.....in.	11	11½	13⅛	14	14¾	15
Flanged, Face to Face.....in.	9	10½	11½	13	14	14⅜
Screwed, End to End.....in.	7	8⅝	10¼	11½	13¼	....
Indicator Post Flange, Diameter.....inches	12	12	12	12	12	12

*Variation in depth of trench (distance from ground line to bottom of pipe): Add for each 6 inches over 6 feet **$2.00**

†Prices of flanged valves include facing and drilling to the 125-pound American Cast-Iron Flange Standard. No deduction is made if flanged valves are ordered faced only.

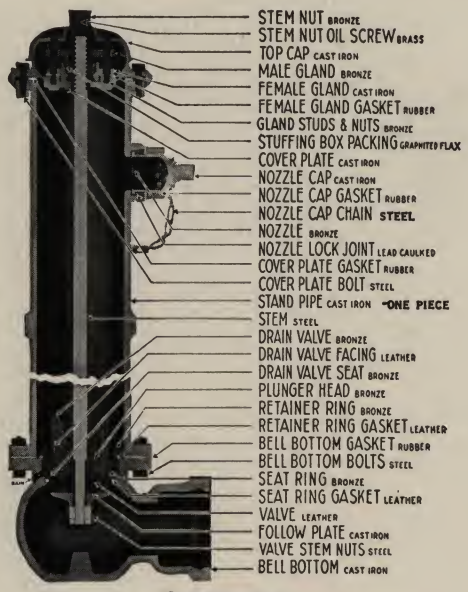
No. **543**, Locking Device Wrench.....each **$2.00**

Standard Compression Fire Hydrants

Manufactured to Comply with American Water Works Association Specifications

One-Piece Stand Pipe

One-Piece Stand Pipe with Steamer Connection



Construction

Two-Piece Stand Pipe with Steamer Connection

A.W.W.A. Standard Fire Hydrants are of the compression type with valve opening downward against the pressure and closing with the pressure; the action is central and direct from operating nut to inlet valve. All working parts are interchangeable and can be quickly withdrawn and replaced through the top of the hydrant without disturbing stand pipe. Valve when shut remains tight when upper portion of barrel is broken off.

Size.—The size of a hydrant is designated by the nominal diameter of the valve opening.

Outlets.—Two 2½-inch nozzle outlets are furnished on hydrant, unless otherwise ordered. Furnished with three 2½-inch outlets or with steamer nozzle when specified.

Hose Nozzle Valves.—Nozzle outlets can be equipped with independent outside hose nozzle valves securely bolted to body of hydrant.

Secondary Gate Valves.—Inlet connection can be equipped with bell end secondary gate valves, securely bolted to bottom of hydrant.

Inlet.—Bell ends are fitted on all hydrants to fit standard cast iron pipe, or if fitted with flanges, of standard dimension corresponding to the pressure under which they are used. (The standard referred to are those adopted by the A.W.W.A.) When required, hydrant can be fitted with two lugs so that leaded joint under ground can be strapped.

Lubrication.—Provision has been made for oiling the stem, both for lubrication and to prevent corrosion. Can be arranged for pressure grease connection.

Valve Seat Ring.—Made of bronze metal, securely fastened in place by an independent bronze retainer ring and can be removed without digging up the hydrant.

Retainer Ring.—An important feature in the A. W. W. A. Standard Hydrant. The valve seat ring is not dependent upon taper threads (which are apt to strip) for making up the joint, but is held in place by the threaded independent retainer ring and with gasket top and bottom, making a perfectly water-tight joint. This arrangement eliminates all strain from the plunger head, steel stem, and drain valve when removing or replacing parts for repairs.

Drain Valve.—A positive operating non-corrodible automatic drip valve is provided and arranged so as to properly drain the hydrant when the main valve is closed. This waste valve is fastened in the hydrant securely, is an integral part of the plunger head, and so designed that it cannot get out of order and can also be easily removed for repairs.

Testing.—Hydrants for pressures of 150 pounds or less, after being assembled are tested by hydraulic pressure to 300 pounds per square inch, before leaving the factory. The test is made with the valve open in order to test the whole barrel for porosity and strength of hydrant body. A second test is made with valve shut, in order to test the strength and tightness of the valve.

Painting.—Unless otherwise specified, all hydrants, after being thoroughly cleaned, are painted below grade line with black asphaltum varnish and above grade line painted target red, the top cap or bonnet is gilded with aluminum bronze. However, hydrants above grade line can be painted implement yellow, green, or any other color when specified, at no extra charge.

Repairing.—Hydrant can be repaired by one man with the aid of a repair wrench. This is accomplished by unbolting the cover plate and removing same, inserting the repair wrench which engages the lugs on retainer ring, then by unscrewing (turn to left) the retainer ring is released, permitting all inner working parts to be withdrawn, including seat ring, main valve, and automatic drip valve. (Repair wrench not furnished with hydrant, but will be loaned at no charge when required or sold at a small cost.)

Two-Piece Stand Pipe (Revolving Head Hydrant) with flange joint just above ground line furnished when specified at no additional cost.

Size of Hydrant	inches	4	5	6
Diameter of Valve Opening	inches	4¼	5¼	6¼
Inside Diameter of Stand Pipe	inches	6¾	7⅜	8¾
Bell Inlet	inches	4 or 6	6 or 8	6 or 8

Furnished with 1, 2 or 3 hose nozzles or with steam nozzle, as specified.

Complete Specifications and Prices on Request

No. 2-A

Eclipse Fire Hydrants
Non-Freezing

The No. 2-A, 1¼-inch and 1½-inch with a 1½-inch valve opening and 1½-inch standpipe and the No. 2 with 2 1/16-inch valve opening and a 3-inch standpipe, are designed for private corporation use or where something smaller than a regular hydrant is required.

Replacement of interior parts may be made without disturbing the connections, by unbolting the top cap and withdrawing the inside working parts.

Specify depth to set in ground, size and style of inlet, number and size of nozzles and gauge of hose threads.

Nos. 2 and 2-A are usually furnished with inlet and outlet connections for wrought iron pipe, although the outlet may be threaded for any desired hose thread and the inlet for connection to cast iron pipe at a small additional cost.

Approx. weights, No. 2-A, 1¼-in. complete, 5-ft. bury, 45 lbs. Calculate 4 lbs. per ft. plus or minus. No. 2-A, 1½-in. complete, 5-ft. bury, 60 lbs. Calculate 5 lbs. per foot plus or minus. No. 2, 2-in. complete, 5-ft. bury, 125 lbs. Calculate 10 lbs. per ft. plus or minus.

No. 2

To Set in Ground Feet	Each — No. 2-A 1¼-In.	No. 2A 1½-In.	No. 2 2-In.	To Set in Ground Feet	Each — No. 2-A 1¼-In.	No. 2-A 1½-In.	No. 2 2-In.
1½	$22.00	$30.47	$41.25	4	$23.65	$32.12	$44.00
2	22.55	30.80	41.80	5	24.20	32.78	45.10
3	23.10	31.46	42.90	6	24.75	33.44	46.20

1½-foot list applies to any shorter length.
For 2½ or 3-inch inlet, add $2.00 to list price.
For two 2-inch outlets, add $4.00 to list price.
For one 2½-inch outlet, add $1.75 to list price.
For two 2½-inch outlets, add $7.50 to list price.

Total Eclipse Hydrants

Non-freezing, positive automatic drain. Closes against pressure without reaction. Valve and working parts of brass. Interior parts easily replaced. Sand cup and valve protector furnished with each hydrant.

Specify if full ¾, 1 or 1¼-inch inlet connection is desired.

The 1½-foot list applies on any shorter length.

The ¾-inch hydrant has combination ½-inch lead or iron pipe or ¾-inch iron pipe inlet connection.

The 1-inch hydrant has combination ¾-inch lead or iron pipe or 1-inch iron pipe inlet connection.

The 1¼-inch hydrant has combination 1-inch lead or iron pipe or 1¼-inch iron pipe connection.

No. 1

No. 1—Compression Type

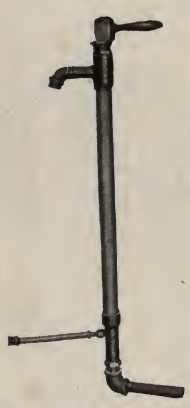
Set in Ground Feet	¾-Inch Each	1-Inch Each	1¼-Inch Each
1½	$7.80	$12.80	$20.00
2	8.20	13.40	20.50
2½	8.60	14.00	20.90
3	9.00	14.60	21.30
3½	9.40	15.20	21.70
4	9.80	15.80	22.10
4½	10.20	16.40	22.50
5	10.60	17.00	22.90
6	11.40	18.20	23.70

No. 7—Self-Closing Type

1½	$9.60	$15.20	.....
2	10.00	15.80	.....
2½	10.40	16.40	.....
3	10.80	17.00	.....
3½	11.20	17.60	.....
4	11.60	18.20	.....
4½	12.00	18.80	.....
5	12.40	19.40	.....
6	13.20	20.60	.....

No. 7

Vogel Frost Proof Garage Hydrants



For use in service stations, farms, dairies, etc., or wherever a supply of water is needed outside all year.

Has a frost proof supply valve with bevel valve seat that will not retain pipe cuttings, sediment, etc.

The by-pass is in the plunger, so that when the rod is withdrawn the waterway is straight and clear with no concealed by-pass in the valve body.

Pipe casing is genuine wrought iron pipe, galvanized.

Made in 3, 4, and 5-foot lengths.

Complete with Lead Waste Connection.....each **$7.50**

No. 36 Total Eclipse Street Washers
Compression Type, Non-Freezing

Non-freezing, positive automatic drain. Closes against the pressure without reaction. Valve working parts of brass. Removal of nozzle and top cap permits withdrawal of interior parts for replacement with ease and without disturbing connection to supply pipe. Sand cup, valve protector, furnished on each street washer.

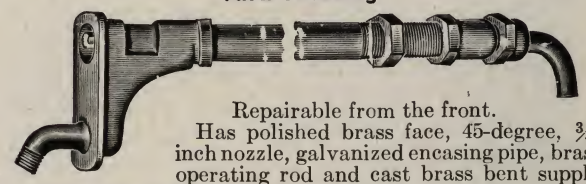
Specify if full ¾, 1 or 1¼-inch inlet connection is desired.

1½-foot list applies on any shorter length.

¾-inch street washer has combination ½-inch lead or iron pipe or ¾-inch iron pipe inlet connection. 1-inch street washer has combination ¾-inch lead or iron pipe or 1-inch iron pipe inlet connection. 1¼-inch street washer has combination 1-inch lead or iron pipe or 1¼-inch iron pipe inlet connection.

Set in Ground Feet	Size, Inches — ¾ Each	1 Each	1¼ Each	Set in Ground Feet	Size, Inches — ¾ Each	1 Each	1¼ Each
1½	$6.40	$9.90	$18.35	4	$8.40	$12.90	$20.35
2	6.80	10.50	18.75	4½	8.80	13.50	20.75
2½	7.20	11.10	19.15	5	9.20	14.10	21.15
3	7.60	11.70	19.55	6	10.00	15.30	21.95
3½	8.00	12.30	19.95	..	.....	.....	.....

No. 555 Eclipse Government Type Wall Hydrants
Anti-Freezing



Repairable from the front.

Has polished brass face, 45-degree, ¾-inch nozzle, galvanized encasing pipe, brass operating rod and cast brass bent supply coupling threaded for ¾-inch iron pipe.

Any intermediate length takes price of next longer size.

For Wall, In.	Each	For Wall In.	Each	For Wall In.	Each	For Wall In.	Each	For Wall In.	Each
9	$7.50	15	$9.30	20	$10.80	26	$12.60	32	$14.40
11	8.10	16	9.60	22	11.40	28	13.20	34	15.00
13	8.70	18	10.20	24	12.00	30	13.80	36	15.60

For nickel-plated face, add 60 cents.
For chromium-plated face, add $1.20.

MATERIAL NOT LISTED

We can furnish practically everything used in mill, factory, or shop.

Please send us all of your inquiries.

Single and Double Strap Clamps

Malleable Iron, with Wrought Iron Straps

Single

No. 722

No. 723

No.	Black Each	Clamp Will Fit: Wrought Pipe Inches	Clamp Will Fit: O.D. Casing Inches	Clamp Will Fit: Cast Iron Pipe Inches	O.D. of Circle Inches	Size of Pipe Tapping in Clamp Inches
0	$1.00	1½	...	.	1⅞	½ or ¾
1	1.00	2	2½	.	2⅜	½ to 1
2	1.25	2½	2¾ & 3	2	2⅞	½ to 1¼
3	1.25	3	3½	.	3½	½ to 1
4	1.50	3	3½	.	3½	1¼ to 2
5	1.50	3½	4	3	4	½ to 1
6	1.75	3½	4	3	4	1¼ to 2
7	1.75	4	4½	.	4½	½ to 1½
8	2.00	4	4½	.	4½	2
13	1.80	5	5½	.	5 9/16	¾ to 1½
14	2.15	5	5½	.	5 9/16	2
19	2.25	6	6⅝	.	6⅝	¾ to 1½
20	2.50	6	6⅝	.	6⅝	2

Double

No. 724

41	$1.00	2	2½	.	2⅜	½ to 1½
42	1.25	2½	2¾ & 3	2	2⅞	¾ to 1½
43	1.25	3	3½	.	3½	¾ to 2
44	1.40	3½	4	3	4	¾ to 2
45	1.50	4	4½	.	4½	¾ to 2
47	2.75	5	5½	.	5 9/16	¾ to 2
49	2.75	6	6⅝	.	6⅝	¾ to 2
50	5.75	6	6⅝	.	6⅝	2½ to 4

Galvanized single strap or double strap clamps are made to order at an advance of 50 per cent over the prices of black clamps.

Round Head Roadway Boxes and Parts

No. 2200, Open Base
No. 2202, Flange Base
Roadway Boxes with 4¼-Inch Shafts

No. 2200
Open Base

Open Base

No.	Comp. Each	Top and Cover Each	Bottom Section Each	Extension In.
140Q	$3.40	$2.15	$1.25	18–24
141Q	3.75	2.15	1.60	22–30
142Q	4.15	2.15	2.00	30–36
142R	4.85	2.85	2.00	30–42
143R	5.15	2.85	2.30	36–48
144R	5.30	2.85	2.45	42–54
145R	5.70	2.85	2.85	48–60

Flanged Base

40Q	$3.40	$2.15	$1.25	18–24
41Q	3.75	2.15	1.60	22–30
42Q	4.15	2.15	2.00	30–36
42R	4.85	2.85	2.00	30–42
43R	5.15	2.85	2.30	36–48
44R	5.30	2.85	2.45	42–54
45R	5.70	2.85	2.85	48–60

Roadway Box Covers

Plain Drop Covers.....each $.50
Lock Drop Covers.....each .90
Plain Flange Covers.....each .65

New Pattern Service Boxes

With 2½-Inch Shaft

Will cover T handle stop cocks from ½ to 1¼-inch.

No.	Extension Inches	Complete Each	Top Section Complete Each	Bottom Section Each	Rods & Rings Extra Each
88	12 Stationary	$1.35	....	....	....
89-A	15 to 21	1.25	$.75	$.50	$.40
90-B	18 to 24	1.35	.75	.60	.40
90-C	21 to 27	1.45	.85	.60	.40
91-C	24 to 33	1.55	.85	.70	.50
92-C	30 to 39	1.65	.85	.85	.50
92-D	30 to 42	1.85	1.00	.85	.50
93-D	36 to 48	2.00	1.00	1.00	.50
93-E	36 to 54	2.15	1.15	1.00	.60
94-E	42 to 60	2.30	1.15	1.15	.60
95-E	48 to 66	2.45	1.15	1.30	.60
100-E	54 to 72	2.65	1.15	1.50	.70
100-F	54 to 78	2.80	1.30	1.50	.70
101-F	60 to 84	2.90	1.30	1.60	.70
95-G	48 to 84	2.95	1.65	1.30	.70
100-G	54 to 90	3.15	1.65	1.50	.70
101-G	60 to 96	3.25	1.65	1.60	.85
110-G	66 to 102	3.40	1.65	1.75	.85

Extension Valve Boxes and Parts

Three Piece Valve Boxes with 5¼-Inch Shafts

No. 3002, Screw Type—No. 3102, Slip Type

No. 3002, Screw Type

Size	Complete Each	Top & Cover Each	Bottom Each	Extension In.
AAA	$6.00	$3.50	....	*17
AA	7.25	3.00	$1.75	26–30
A	7.90	3.50	1.90	33–42
B	8.20	3.50	2.20	36–48
C	8.50	3.50	2.50	45–54
CC	9.00	3.50	3.00	51–60
D	9.45	4.45	2.50	45–66
E	10.00	3.50	4.00	63–72
F	10.95	4.45	4.00	63–84
G	11.90	4.45	4.95	75–96

*Stationary.

Drop covers marked Water furnished unless otherwise specified.

Above prices are with No. 6 round base which is regularly furnished.

Base No.	Each	Shape of Base	Size Valve In.	Ht. In.
4	$2.00	Round	6 or Smaller	8
6	2.50	Rd. or Oval	8 or Smaller	11
8	3.50	Round	12 or Smaller	11
140	2.50	Dome	24 or Smaller	5
160	3.50	Oval	16 or Smaller	9½
162	6.00	Oval	20 or Smaller	10
16	8.50	Rd. or Oval	16 or Smaller	15¼

For valve boxes with any of the above bases, add or deduct difference in price as compared with No. 6 base.

5¼-Inch Valve Box Extension Sections

No. 58, Screw Type, No. 58A Slip Type, Increasing Length 14 Inches.....each $1.75

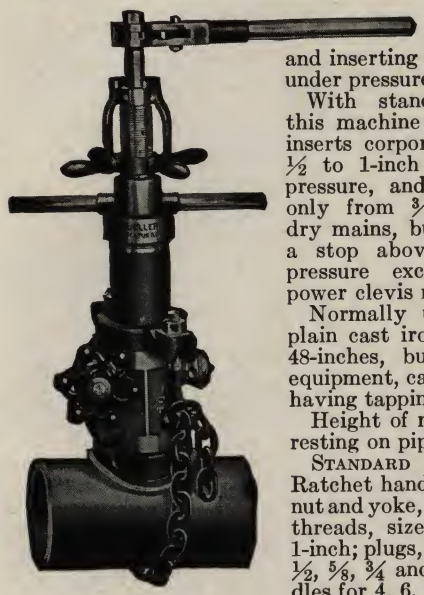
Valve Box Covers

Drop Cover

Drop Covers.....each $.88
Drop Lock Covers.....each 1.25
Flange Covers.....each 1.00

Flange Cover

Type B Mueller Water Tapping Machines



For tapping water mains, and inserting corporation stops under pressure.

With standard equipment, this machine makes taps and inserts corporation stops from ½ to 1-inch in mains under pressure, and will make taps only from ⅜ to 2-inches in dry mains, but will not insert a stop above 1-inch. When pressure exceeds 90 pounds power clevis must be used.

Normally used for tapping plain cast iron pipe from 4 to 48-inches, but with suitable equipment, can tap smaller pipe having tapping bosses.

Height of machine with tool resting on pipe, 24¼ inches.

STANDARD EQUIPMENT.—Ratchet handle, combined feed nut and yoke, tools with Mueller threads, sizes, ½, ⅝, ¾ and 1-inch; plugs, male screw, sizes, ½, ⅝, ¾ and 1-inch; iron saddles for 4, 6, 8 and 10-inch cast iron pipe; rubber gasket for top of saddles; rubber gasket for all sizes of cast or wrought iron pipe; chain for pipe up to 12-inch; chain wrench and body cleaning chisel; oil and cutting grease.

Type B, in Strongly Constructed box.....each **$145.00**
Shipping weight.....lbs. 120

Special iron-bound chest at an extra charge, if desired.

Optional equipment: Tools with I.P. Thread; 4 iron saddles for any size cast iron pipe; Inside, screw plugs with Mueller, Copper Pipe Connection, or I. P. Thread instead of Outside; without additional charge.

Mueller Meter Yokes

Single-Bar Riser Type

No. 10840

For use with meters where mains and services are deep in the ground. Compact and sturdy. Has vertical inlet and outlet. Strong cast iron yoke provided with vertical bearings in the ends, and the stops and elbows extend through them and are locked in place by lock nuts. Stop, elbow, and expansion connection are all bronze, giving a full bronze waterway.

No. 10840 has ground key stop. No. 10841 has copper service connection on inlet end. No. 10842 has copper service connection on inlet and outlet. No. 10843 has elbow inlet instead of stop on inlet.

Yoke Size, Female I.P....inches	⅝	⅝x¾	¾	1
No. **10840**.....each	$5.80	$6.05	$8.55	$12.70
No. **10841**.....each	6.40	6.65	9.15	13.70
No. **10842**.....each	7.00	7.25	9.75	14.70
No. **10843**.....each	5.75	5.85	8.40	14.00

No. H-10373 Mueller Service Box Repair Lids

For New Style Buffalo Boxes

Provides a means of supplying a lid to any box, regardless of condition of box top. Easily attached, requires only use of regular pentagon head key.

Size.....inches **2½**
No. **H-10373**.....each **$.47**

Worthington-Gamon Watch Dog Disc Water Meters

Regular Frost-Proof Model

This is the regular model frost-proof meter, for household and other domestic uses. It has a bronze casing and close grain cast iron bottom cap, designed to break when the water in the meter is frozen.

This meter can be equipped with either open gear train or oil enclosed gear train. Disc is of three piece flat design provided with thrust roller.

The frost-proof feature in the disc meter is the recognized standard and its use is advocated wherever there is danger of damage by frost. All casings are of bronze construction.

Size In.	Safe Max. Del. Gal. per Min.	Over All Dimensions, In. Lgth.	Width	Ht.	Weight, Pounds Net Without Couplings	Net With Couplings
⅝	30	7½	5⅜	8	10½	11¼
⅝x¾	30	7½	5⅜	8	10½	11¾
¾	40	9	6	8½	13	14¼
1	70	10¾	8½	9½	21	23⅛
1¼	80	11	8½	9½	25	29

Regular Split Case Model

This meter in the smaller sizes is used for household and other domestic uses where there is no danger of damage by frost.

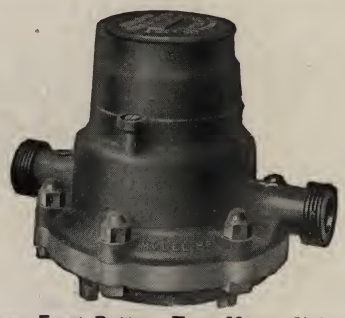
This meter can be equipped with either open gear train or oil enclosed gear train.

Disc is of three piece flat design provided with thrust roller.

All casings are of bronze construction.

Size In.	Safe Max. Del. Gal. per Min.	Over All Dimensions, In. Lgth.	Width	Ht.	Weight, Pounds Net Without Couplings	Net With Couplings
⅝x½	30	7½	4¾	7¼	10	10¾
⅝x¾	30	7½	4¾	7¼	10	11¼
¾	40	9	6½	7¾	13	14¼
1	70	10¾	7¾	8 5/16	20	22⅛
1¼	80	11	7¾	8⅞	25	29

Niagara and American Water Meters



American Frost Bottom Type Meter, ⅝-Inch Size

The Niagara or American Water Meter is a first quality, full size, fully guaranteed meter of positive displacement disc type as universally used by water works. It measures with unusual accuracy at all rates of flow permitting water works to earn full revenue and profits for water sold or industries to obtain accurate process control and cost records.

The Niagara Meter has the outer casing made of cast iron hot zinc coated and is especially recommended for hard alkaline or corrosive water. The American Meter has the main casing made of cast bronze. Both brands contain the same works and are of equal quality.

Niagara Solid Casing Type Meter, ⅝-Inch Size

In sizes ⅝ to 1 inch the American and Niagara Meters are made with or without breakable cast iron frost bottom. The frost bottom prevents damage to more expensive parts should the meter freeze. Breaking action is pre-tested at the factory to insure dependability in service.

Meters are regularly furnished with external threads for brass union meter couplings. American Meters in sizes 1¼, 1½, and 2 inches may also be furnished with internal pipe threads without extra charge. Gear trains are patented chromium-shell water-lubricated type. Oil-enclosed type available in all meters up to 2 inches.

All meters comply with the Standard Specifications of the American Water Works Association covering accuracy, capacity, interior construction, dimensions, and guarantee.

Size Inches	Greatest Proper Capacity U.S. Gal. per Min.	Niagara Either Type Each	Niagara Couplings Extra per Pair	American Solid Casing Type Each	American Frost Bottom Type Each	American Couplings Extra per Pair
⅝x½	20	‡$16.00	$1.00	‡$20.00	‡$18.00	$1.00
⅝x¾	20	‡16.00	1.50	‡20.00	‡18.00	1.50
¾	34	‡24.00	1.50	‡30.00	‡27.00	1.50
1	53	‡35.20	2.20	‡44.00	‡39.60	2.20
1¼	75	*‡48.00	3.00	‡60.00	.....	No Charge
1½	100	*‡64.00	4.00	‡80.00	.....	No Charge
2	160	*‡96.00	6.00	‡120.00	.....	No Charge
2½	240	*160.00	No Charge for Flanges	200.00	.....	No Charge for Flanges
3	315	*200.00		240.00	.....	
† 3	375	*240.00		.....	.....	
† 4	500	*360.00		400.00	.....	
† 6	1000	*720.00		800.00	.....	

†Heavy duty type.
*Made in solid casing type only.
‡Oil-enclosed gear train, $1.00 extra.

Niagara Hot Water Meters

G Size

A simple positive displacement disc type meter with works of special construction to run in water of any specified temperature up to 350° F. The register is of the all-metal, straight reading type and indicates U. S. gallons, imperial gallons or litres. A Niagara Trap Strainer should be purchased to install ahead of each meter, for protection against pipe scale and other foreign matter in the water.

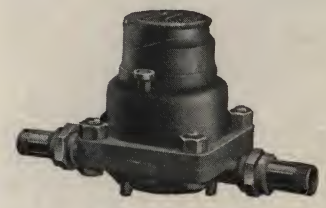
All sizes of Niagara Hot Water Meters may also be furnished with vertical dial six inches in diameter, as shown below. The size of meter required is not determined by the size of pipe on which it is to be set, but by the flow to be measured. The capacity of the meter shown in g.p.m. below may be reduced to pounds of water per minute by multiplying by 8⅓. Meters may be run at twice maximum rating on intermittent service or occasional peak loads. Orders must specify temperature, pressure, rate of flow and whether water is treated with alkaline boiler compound.

With Vertical Dial

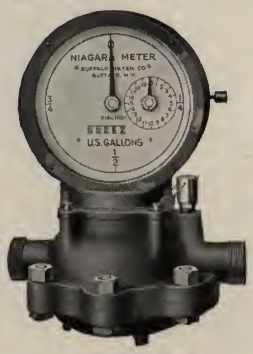
On the vertical dial meter, all sizes up to DV have 10-gallon graduation. All sizes EV and larger have 100-gallon graduation unless otherwise specified. Dial can be set to face any quarter.

Size of Meter	Each Horizontal Dial Type	Each Vertical Dial Type	Pipe Connections Size Inches	Pipe Connections Style	Flow Range G.P.M.	Max. Boiler H.P.
B	$20.00	$40.00	½ or ¾	Screwed	2–4	65
C	30.00	50.00	¾ or 1	Screwed	3–6	95
DV	44.00	64.00	1 or 1¼	Screwed	5–10	160
EV	60.00	80.00	1¼ or 1½	Screwed	7–14	220
FV	80.00	100.00	1½	Screwed	9–18	280
GV	120.00	140.00	2	Screwed	13–26	420
G	180.00	200.00	2½	Flanged	20–40	640
GX	200.00	220.00	3	Flanged	20–40	640
IV	240.00	260.00	3	Flanged	30–60	1000
JV	400.00	420.00	4	Flanged	50–100	1600
LV	800.00	820.00	6	Flanged	80–160	2500

Niagara Oil and Gasoline Meters



Horizontal Dial



Vertical Dial

Niagara Oil Meters measure all liquids other than water which are not chemically destructive, and operate by volumetric displacement. Used for measuring sales or deliveries of petroleum products in bulk or retail quantities; to show the consumption and regulate the flow of oil to oil burners; to measure gasoline sales at service stations. May be furnished for measuring vegetable oils, alcohol, paint and varnish products, etc. Crude oil may be measured after trapping out gas, water and sand.

Operate on pressures of 1 to 150 pounds and at temperatures up to 200°F, or higher if specified. The horizontal register is all-metal straight reading type indicating U.S. gallons, Imperial gallons or Litres. Vertical registers are also offered and information will be sent on request.

For average service, meter should be operated within the flow range specified, though meters other than the "A" size may occasionally be run above or below the rated capacities when operated in oil. Select the size of meter according to the rate of flow rather than the pipe size. Choice of pipe size is available in certain models.

Price of oil meter includes meter union couplings in 2 inches or smaller sizes, or companion flanges in 2½ inches and larger sizes. A Niagara Trap Strainer of the same pipe size should be installed immediately ahead of each meter for protection against foreign matter. Orders must specify size of meter and connections, kind of dial, product to be measured, pressure, temperature and rate of flow.

Meter Size	Size Pipe Connection Inches	Horizontal Dial Type Each	Two-Hand 6-Inch Vertical Dial Type Each	Capacity, Gpm. Oil Normal	Oil Max.	Gasoline Normal	Gasoline Max.	Ship. Wt. Pounds with Conn. & Strainer
A	½	$20.00	.....	1/30–5	5	1–5	5	17
B	½ or ¾	20.00	.....	1/2–8	20	5–10	15	19
BNV	½ or ¾	23.00	$50.00	1/2–12	20	5–15	15	20
C	¾ or 1	30.00	.....	1–15	30	7–24	24	28
CNV	1	33.00	60.00	1–15	30	7–24	24	28
DV	1 or 1¼	44.00	74.00	2–30	50	10–30	30	41
EV	1¼ or 1½	60.00	90.00	3–45	75	14–45	45	54
FV	1½	80.00	110.00	4–60	100	18–65	65	64
GV	2	120.00	150.00	5–80	160	28–100	100	118
G	2½	180.00	210.00	8–125	225	40–160	160	232
GX	3	200.00	230.00	8–160	240	40–160	160	256
IV	3	240.00	270.00	12–200	375	60–225	225	329
JV	4	400.00	430.00	18–300	500	80–330	330	641
LV	6	800.00	830.00	30–600	1000	160–660	660	1111

Niagara Trap Strainers

For removing sediment and foreign matter from oil or water lines, or water from compressed air lines. Galvanized casing, bronze self-cleaning screen, silver-soldered or welded to stand high temperature, non-agitated sump at bottom. Should be used ahead of every oil or hot water meter.

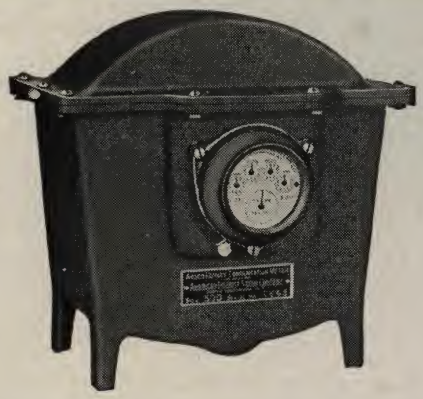
Threaded

Size Inches	Each	Size Inches	Each
½	$7.20	1½	$21.00
¾	7.60	2	33.00
1	11.25	2½	49.00
1¼	12.25	3	53.00

Flanged

4	.....	6	.....

Adsco Rotary Condensation Meters



These meters accurately measure the steam consumption of heating systems, hot water heaters, cooking equipment, laundry equipment, unit heaters, blast coils and heat exchangers of all kinds in which steam is used as the heating medium. These meters measure the steam after it has been condensed and will operate under gravity or vacuum conditions.

Meter consists of a cast iron or aluminum case, enclosing a copper rotor consisting of an assembly of six separate buckets which are nested around a hollow trunnion with bearing surfaces on either side.

A bronze nozzle projects through the case into center of rotor, through which the condensate is discharged as it flows from the heating system. The condensate entering one compartment of the rotor changes the center of gravity, causing the rotor to turn. After flowing through each successive compartment, the condensate is discharged through openings in the circumference of the rotor. The process is continuous and the rotor design is such that a complete revolution discharges a predetermined amount of condensate.

In the front end of the rotor trunnion is a slot which engages the counter driver and transmits the revolutions of the rotor to the counter mechanism on front of meter case, which reads in pounds of condensate, representing the same number of pounds of steam. A ventilated, cast iron counter case prevents fogging of the glass dial face, making it possible to read the registration at all times.

Inlet and outlet connections are provided on back of meter. Inlet is of cast bronze.

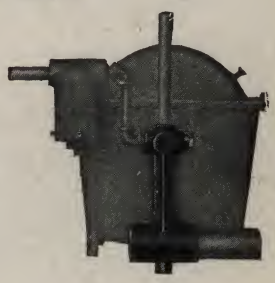
Bearing wheels and the six buckets of the rotor can be removed.

Size No.	Each	Size In.	Inlet	Outlet	Cap. Per Hour pounds	Weight Lb. Cast Iron Case	Weight Lb. Aluminum Case
250	$60.00	12⅜x12	½	1½	250	30	17
500	75.00	12⅜x12	½	1½	500	35	20
750	105.00	16⅞x17⅛	¾	2	750	70	30
1500	145.00	16⅞x17⅛	¾	2	1500	80	37
3000	220.00	25½x23¼	1½	3	3000	180	75
6000	325.00	25½x23¼	1½	3	6000	*246	98
12000	500.00	31½x31	2	4	12000	*565	256

*Aluminum cover.

Meter Manifolds

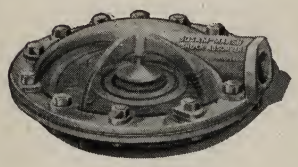
Type B manifold for use on the Rotary condensation meter insures correct location of connections without installing the meter before it is required. A one-piece casting with two inlet holes to permit piping to be connected from either side. A ¾ in. tapping is provided at top for vent pipe and tell-tale. Unions are furnished for connections to meter.



For Meter	Each	For Meter	Each	For Meter	Each	For Meter	Each
250	$7.50	750	$8.50	3000	$10.00	12000	$15.00
500	7.50	1500	8.50	6000	10.00	.....	.....

Josam Shock Absorbers

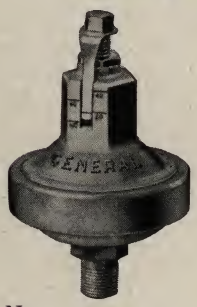
Improved Multiple Spring Type
For Any Pressure or Any Diameter of Pipe



Recommended for quieting water-hammer and absorbing thrust and vibration in water supply pipe lines. Every plumbing installation is subject to water-hammer, which is especially annoying in hospitals, hotels, office buildings, schools, etc. One shock absorber will mute several fixtures. It operates in any position in line; requires no attention after installation.

Type	M-½	M-¾	M-1	M-1½	M-2
Size.....inches	½	¾	1	1½	2
Each	$11.30	11.30	19.00	34.00	41.00

General Water Hammer Silencers



An adjustable silencer which eliminates water hammer in hot and cold water lines without using an air cushion.

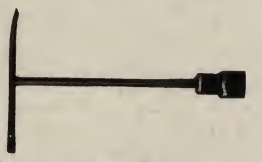
When fixtures are closed quickly the build-up to normal pressure is scientifically retarded so that the hammer or pounding is eliminated.

Equally effective on rigid pipe or copper tubing.

Adjustable to water pressure system by merely turning adjusting nut.

No	2	3
Each	....	....
Threaded.....inches	½	1
Service Line Capacity.....inches	½, ¾, 1	1¼, 1½, 2
Height.....inches	6	10

No. 122 Kennedy Valve Wrenches or Keys



Specify size of valve and length of wrench or size of valve and depth of trench.
Price, No. **122**.....each **$6.00**
Price is for wrench for use with valves set in 5-foot trench or shallower. For each foot or fractional foot increased length add 40 cents per foot.

No. 10323 Mueller Service Box Pentagon Keys

This key is made of malleable iron, enameled, and is used for operating the screws in Mueller improved and Buffalo type service box covers.

May also be used for unscrewing covers of several other makes of service boxes and repair lids.

No. **10323**.....each **$.30**

Water Supply Systems

Consult us on water supply systems, large or small. We furnish accurate estimates for installing and operation. We furnish all styles of pumps and accessories including deep well turbines.

Cast Iron Cistern Rings and Covers

Interlocking

Size Inches	Diam. Across Top Inches	Price Each
18	23	**$7.00**
20	26	**9.00**
22	28	**11.00**
24	30	**13.00**

No. 3810 Cast Iron Meter Rings

For Sewer Tile Base

With plain or locking covers.

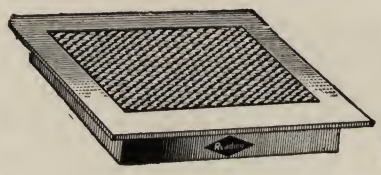
Size.....inches	12x15	12x18	12x24
Each	.....	.....	.....
Diam. Flange.....in.	17¼	20	26 7/16
Height.....inches	3⅜	3⅝	3⅝
Weight.....lb.	25	30	40

Solid Cover Cast Iron Manhole Covers and Frames

Regularly sent with solid cover. Perforated cover furnished at same price.

No.	Diam. Cover Inches	Height Frame Inches	Diam. Bottom Flange Inches	Diam. Opening Inches	Price Each
1	22¼	8¾	36	20½	.....
2	23¾	7½	36	22	.....
3	30	8¾	44	28	.....
4	21½	5	30	19½	.....

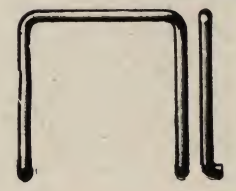
No. 267 Square Manhole Frames



With Solid Cover

Size Inches	Each	Weight Pounds Frame	Weight Pounds Cover
18x18	**$11.56**	56	46¾
24x24	**17.60**	68	76

No. W258 Manhole Steps



Made from ⅝, ¾, ⅞ and 1-inch round steel, hot galvanized.

Any size desired can be made quickly.

Prices upon application.

Cast Iron Screwed Fittings

Approximate Weight in Pounds Each

Standard Pattern

Elbows

Size In.	Weight Lb. 90°	45°
1/4	.18	.17
3/8	.27	.26
1/2	.38	.36
3/4	.66	.56
1	.98	.90
1 1/4	1.6	1.5
1 1/2	2.1	1.9
2	3.1	2.8
2 1/2	4.7	4.3
3	7.7	5.8
3 1/2	10	8.0
4	12.8	11.5
5	21	17.5
6	30.7	25.6
8	69	47
10	119	86
12	169	124

Tees

Size In.	Wt. Lb.	Size In.	Wt. Lb.
1/4	.25	3	9.6
3/8	.35	....	.....
1/2	.56	3 1/2	12
3/4	.9	4	17
1	1.4	5	28.5
1 1/4	2.2	6	40
1 1/2	2.8	8	84
2	4.6	10	135
2 1/2	6.2	12	218

Crosses

3/8	.33	3	11.5
1/2	.65	3 1/2	14.7
3/4	1.1	4	20
1	1.8	5	34.7
1 1/4	2.5	6	50
1 1/2	3.3	8	82
2	5.1	10	136
2 1/2	8.1	12	229

Plugs

1/4	.04	3	1.74
3/8	.06	3 1/2	2.8
1/2	.08	4	3.3
3/4	.15	5	4.7
1	.27	6	10.0
1 1/4	.46	8	18.4
1 1/2	.71	10	27.8
2	1.00	12	47.0
2 1/2	1.22	..	.....

***Bushings**

1/2	.05	3 1/2	2.1
3/4	.10	4	3.0
1	.16	5	3.8
1 1/4	.26	6	5.0
1 1/2	.28	8	9.0
2	.75	10	17.5
2 1/2	1.2	12	30.0
3	1.7	..	.....

***Reducers**

1 1/4	1.25	4	7.0
1 1/2	1.7	5	10.0
2	2.0	6	15.3
2 1/2	3.8	8	35.3
3	4.1	10	55.0
3 1/2	4.3	12	76.0

*Reducing one size.

Caps

1 1/4	.97	4	6.8
1 1/2	1.2	5	11.8
2	1.8	6	14.2
2 1/2	2.9	8	24.8
3	3.8	10	50.3
3 1/2	5.0	12	71.0

Lock Nuts

2 1/2	1.9	5	5.1
3	2.1	6	6.0
3 1/2	2.9	8	14.5
4	3.5	..	.....

Standard Pattern

Companion Flanges

Size In.	Wt. Lb.	Size In.	Wt. Lb.
1 1/2	2.64	10	39.7
2	4.5	12	60.3
2 1/2	6.5	14	74.0
3	8.4	16	93.5
4	12.8	18	105.0
5	14.3	20	140.0
6	18.2	24	188.0
8	29.0	..	.....

Flanged Unions

1/2	1.0	3 1/2	15.0
3/4	2.3	4	20.0
1	3.0	5	23.0
1 1/4	4.0	6	33.0
1 1/2	5.1	8	58.0
2	6.5	10	80.0
2 1/2	10.0	12	122.0
3	12.6	..	.....

Y Bends

1/2	.71	3	12.7
3/4	1.0	3 1/2	17.8
1	1.54	4	23.6
1 1/4	2.6	5	41.0
1 1/2	3.5	6	51.0
2	6.0	8	117.0
2 1/2	8.2	..	.....

Return Bends

Size In.	Weight, Lb. C.P.	O.P.
1/2	.55	.66
3/4	.75	1.25
1	1.6	1.93
1 1/4	2.5	2.7
1 1/2	2.7	3.7
2	4.8	6.3
2 1/2	8.2	10.0
3	12.1	15.0

Extra Heavy Pattern

Elbows

Size In.	Weight, Lb. 90°	45°
1/4	.36	.....
3/8	.51	.....
1/2	.7	.46
3/4	1.2	.85
1	1.7	1.5
1 1/4	2.5	1.9
1 1/2	3.6	2.7
2	5.7	5.0
2 1/2	10.3	8.3
3	14.0	12.1
3 1/2	20.0	14.0
4	26.0	19.9
5	45.0	30.7
6	63.0	43.2
8	125.0	91.0
10	200.0	134.0
12	340.0	239.0

Tees

Size In.	Wt. Lb.	Size In.	Wt. Lb.
1/4	.49	3	19.0
3/8	.70	3 1/2	26.5
1/2	.90	4	34.0
3/4	1.63	5	55.0
1	2.4	6	75.0
1 1/4	3.2	8	145.0
1 1/2	4.8	10	228.0
2	7.5	12	380.0
2 1/2	13.8	....	.....

Flange Unions

3/4	2.5	3 1/2	19.5
1	3.7	4	23.0
1 1/4	4.5	5	31.0
1 1/2	6.0	6	40.5
2	8.0	8	73.5
2 1/2	11.3	10	105.0
3	15.2	12	136.0

Gallons Discharged per Hour

Through Various Sized Orifices Under Stated Pressures

Head in Feet	Pounds Pressure per Square Inch	Diameters of Orifices in Inches and Fractions of an Inch 1/4	3/8	1/2	5/8	3/4
20	8.66	300	720	1260	1920	2760
40	17.32	450	960	1800	2760	3960
60	25.99	540	1200	2160	3480	4800
80	34.65	620	1380	2460	3840	5580
100	43.31	690	1560	2760	4320	6240
120	51.98	780	1680	3000	4740	6840
140	60.64	816	1860	3300	5100	7320
150	64.97	840	1920	3420	5280	7620
175	75.80	900	2040	3660	5700	8220
200	86.63	960	2220	3900	6120	8760
235	101.79	1080	2460	4320	8280	11160

Head in Feet	Pounds Pressure per Square Inch	Diameters of Orifices in Inches and Fractions of an Inch 1	1 1/4	1 1/2	1 3/4	2
20	8.66	4920	7380	11100	15120	19740
40	17.32	6720	10920	15720	21360	27960
60	25.99	8580	13380	19200	26220	34260
80	34.65	9840	15480	22260	30300	39540
100	43.31	11040	17280	24900	33900	44280
120	51.98	12120	18960	27240	37440	48480
140	60.64	13020	20160	29460	39080	52320
150	64.97	13560	21180	30480	41460	54120
175	75.80	14640	22800	32880	44940	58560
200	86.63	15600	25020	35880	47880	62580
235	101.79	17100	26760	38520	52260	68460

The pressure or head of water is taken at the orifice, no allowance being made for friction in the pipe. In practical calculations to determine the height which water can be thrown, the head consumed by the friction of the water in flowing from the source to the orifice must be considered.

Surfaces and Capacities of Pipes

Sizes of Pipes . inches	1/2	3/4	1	1 1/4	1 1/2	2
Actual Inside Diameter . . . . . inches	.623	.824	1.048	1.380	1.611	2.067
Outside Circumference of Pipes . . . inches	2.652	3.299	4.136	5.215	5.969	7.461
Actual Outside Diameter . . . . . inches	.84	1.05	1.315	1.66	1.9	2.375
Length of Pipe in Feet per Square Foot of Outside Surface .	4.52	3.63	2.90	2.30	2.01	1.61
No. of Square Feet of Outside Surface in 1 Lineal Foot of Pipe	.22	.27	.34	.43	.50	.62
Cubic Inches of Internal Capacity in 10 Lineal Feet of Pipe	36.5	63.9	103.5	179.5	244.5	402.6
Weight of Pipe per Foot . . . pounds	.84	1.11	1.67	2.24	2.68	3.61
Weight of Water in 10 Lineal Feet of Pipe . . . . pounds	1.38	2.31	3.75	6.5	8.8	14.6

Sizes of Pipes . . inches	2 1/2	3	3 1/2	4	4 1/2	5
Actual Inside Diameter . . . . inches	2.468	3.067	3.548	4.026	4.508	5.047
Outside Circumference of Pipes . . inches	9.032	10.99	12.56	14.13	15.70	17.477
Actual Outside Diameter . . . . inches	2.875	3.5	4.	4.5	5.	5.563
Length of Pipe in Feet per Square Foot of Outside Surface. .	1.32	1.09	.954	.849	.763	.686
No. of Square Feet of Outside Surface in 1 Lineal Foot of Pipe.	.75	.92	1.05	1.18	1.31	1.456
Cubic Inches of Internal Capacity in 10 Lineal Feet of Pipe.	573.9	886.6	1186.4	1527.6	1912.6	2398.0
Weight of Pipe per Foot . . . . pounds	5.74	7.54	9.	10.66	12.34	14.617
Weight of Water in 10 Lineal Feet of Pipe . . . . pounds	20.8	32.1	43.6	55.4	69.3	86.73

Friction of Water in Pipes

Loss of Head in Feet Due to Friction, per 100 Feet of Ordinary Iron Pipe

Gallons per Minute	Size Pipe, Inches															
	¼		⅜		½		¾		1		1¼		1½		2	
	Vel.	Fric.	Vel.	Fric.	Vel.	Fric.	Vel.	Fric.	Vel.	Fric.	Vel.	Fric.	Vel.	Fric.	Vel.	Fric.
1	3.08	28.0	1.67	6.4	1.05	2.1	....	....	....	....	....	....	....	....	....	....
2	6.16	103.0	3.35	23.3	2.10	7.4	1.20	1.9	....	....	....	....	....	....	....	....
3	....	....	5.02	49.0	3.16	15.8	1.80	4.1	1.12	1.26	....	....	....	....	....	....
4	....	....	6.70	84.0	4.21	27.0	2.41	7.0	1.49	2.14	0.86	0.57	0.63	0.26	....	....
5	....	....	8.37	126.0	5.26	41.0	3.01	10.5	1.86	3.25	1.07	0.84	0.79	0.39	....	....
10	....	....	....	....	10.52	147.0	6.02	38.0	3.72	11.7	2.14	3.05	1.57	1.43	1.02	0.50
15	....	....	....	....	....	....	9.02	80.0	5.60	25.0	3.2	6.50	2.36	3.0	1.53	1.0
20	....	....	....	....	....	....	12.03	136.0	7.44	42.0	4.29	11.1	3.15	5.2	2.04	1.82
25	....	....	....	....	....	....	....	....	9.30	64.0	5.36	16.6	3.94	7.8	2.55	2.73
30	....	....	....	....	....	....	....	....	11.15	89.0	6.43	23.5	4.72	11.0	3.06	3.84
35	....	....	....	....	....	....	....	....	13.02	119.0	7.51	31.2	5.51	14.7	3.57	5.1
40	....	....	....	....	....	....	....	....	14.88	152.0	8.58	40.0	6.3	18.8	4.08	6.6
45	....	....	....	....	....	....	....	....	....	....	9.65	50	7.08	23.2	4.60	8.2
50	....	....	....	....	....	....	....	....	....	....	10.72	60	7.87	28.4	5.11	9.9
70	....	....	....	....	....	....	....	....	....	....	15.01	113	11.02	53.0	7.15	18.4
90	....	....	....	....	....	....	....	....	....	....	....	....	14.17	84.0	9.19	29.4
100	....	....	....	....	....	....	....	....	....	....	....	....	15.74	102.0	10.21	35.8
120	....	....	....	....	....	....	....	....	....	....	....	....	18.89	143.0	12.25	50.0
140	....	....	....	....	....	....	....	....	....	....	....	....	22.04	190.0	14.30	67.0
160	....	....	....	....	....	....	....	....	....	....	....	....	....	....	16.34	86.0
180	....	....	....	....	....	....	....	....	....	....	....	....	....	....	18.38	107.0
200	....	....	....	....	....	....	....	....	....	....	....	....	....	....	20.42	129.0
220	....	....	....	....	....	....	....	....	....	....	....	....	....	....	22.47	154.0
240	....	....	....	....	....	....	....	....	....	....	....	....	....	....	24.51	182.0
260	....	....	....	....	....	....	....	....	....	....	....	....	....	....	26.55	211.0

Gallons per Minute	Size Pipe, Inches															
	2½		3		4		5		6		8		10		12	
	Vel.	Fric.	Vel.	Fric.	Vel.	Fric.	Vel.	Fric.	Vel.	Fric.	Vel.	Fric.	Vel.	Fric.	Vel.	Fric.
10	0.65	0.17	0.45	0.07	....	....	....	....	....	....	....	....	....	....	....	....
15	0.98	0.36	0.68	0.15	....	....	....	....	....	....	....	....	....	....	....	....
20	1.31	0.61	0.91	0.25	....	....	....	....	....	....	....	....	....	....	....	....
25	1.63	0.92	1.13	0.38	....	....	....	....	....	....	....	....	....	....	....	....
30	1.96	1.29	1.36	0.54	....	....	....	....	....	....	....	....	....	....	....	....
35	2.29	1.72	1.59	0.71	....	....	....	....	....	....	....	....	....	....	....	....
40	2.61	2.20	1.82	0.91	1.02	0.22	....	....	....	....	....	....	....	....	....	....
45	2.94	2.80	2.05	1.15	1.17	0.28	....	....	....	....	....	....	....	....	....	....
50	3.27	3.32	2.27	1.38	1.28	0.34	....	....	....	....	....	....	....	....	....	....
70	4.58	6.2	3.18	2.57	1.79	0.63	1.14	0.21	....	....	....	....	....	....	....	....
75	....	....	....	....	1.92	0.73	1.22	0.24	....	....	....	....	....	....	....	....
90	5.88	9.8	4.09	4.08	....	....	....	....	....	....	....	....	....	....	....	....
100	6.54	12.0	4.54	4.96	2.55	1.23	1.63	0.39	1.14	0.14	....	....	....	....	....	....
120	7.84	16.8	5.45	7.0	3.06	1.71	1.96	0.57	1.42	0.25	....	....	....	....	....	....
125	....	....	....	....	3.19	1.86	2.04	0.64	1.48	0.28	....	....	....	....	....	....
140	9.15	22.3	6.35	9.2	....	....	....	....	....	....	....	....	....	....	....	....
150	....	....	....	....	3.84	2.55	2.45	0.88	1.71	0.32	....	....	....	....	....	....
160	10.46	29.0	7.26	11.8	....	....	....	....	....	....	....	....	....	....	....	....
175	....	....	....	....	4.45	3.36	2.86	1.18	2.00	0.48	....	....	....	....	....	....
180	11.76	35.7	8.17	14.8	....	....	....	....	....	....	....	....	....	....	....	....
200	13.07	43.1	9.08	17.8	5.11	4.37	3.27	1.48	2.28	0.62	....	....	....	....	....	....
220	14.38	52.0	9.99	21.3	....	....	....	....	....	....	....	....	....	....	....	....
225	....	....	....	....	6.32	6.61	3.67	1.86	2.57	0.74	....	....	....	....	....	....
240	15.69	61.0	10.89	25.1	....	....	....	....	....	....	....	....	....	....	....	....
250	....	....	....	....	6.40	6.72	4.08	2.24	2.80	0.92	1.60	0.22	....	....	....	....
260	16.99	70.0	11.80	29.1	....	....	....	....	....	....	....	....	....	....	....	....
270	....	....	....	....	6.90	7.70	4.42	2.60	3.03	1.13	1.70	0.25	....	....	....	....
275	....	....	....	....	7.03	7.99	4.50	2.72	3.06	1.15	1.73	0.27	....	....	....	....
280	18.30	81.0	12.71	33.4	....	....	....	....	....	....	....	....	....	....	....	....
300	19.61	92.0	13.62	38.0	7.66	9.38	4.90	3.15	3.40	1.29	1.90	0.36	....	....	....	....
350	....	....	....	....	8.90	12.32	5.72	4.19	3.98	1.69	2.20	0.41	....	....	....	....
400	....	....	....	....	10.20	15.82	6.54	5.33	4.54	2.21	2.60	0.56	....	....	....	....
450	....	....	....	....	11.50	19.74	7.35	6.65	5.12	2.74	2.92	0.64	1.80	0.21	....	....
470	....	....	....	....	12.16	22.40	7.78	7.42	5.49	3.12	3.07	0.77	1.92	0.24	....	....
475	....	....	....	....	12.30	22.96	7.88	7.22	5.55	3.21	3.10	0.79	1.94	0.25	....	....
500	....	....	....	....	12.77	24.08	8.17	8.12	5.60	3.26	3.20	0.81	2.04	0.28	1.42	0.11
550	....	....	....	....	....	....	8.99	9.66	6.16	3.93	3.52	0.98	2.25	0.33	1.57	0.14
600	....	....	....	....	....	....	9.80	11.34	6.72	4.70	3.84	1.16	2.46	0.39	1.71	0.15
650	....	....	....	....	....	....	10.62	13.16	7.28	5.50	4.16	1.34	2.66	0.46	1.85	0.19
700	....	....	....	....	....	....	11.44	15.12	7.84	6.38	4.46	1.54	2.86	0.52	2.00	0.22
750	....	....	....	....	....	....	12.26	17.22	8.50	7.00	4.80	1.74	3.06	0.59	2.13	0.24
800	....	....	....	....	....	....	....	....	9.08	7.90	5.12	1.97	3.28	0.67	2.27	0.27
850	....	....	....	....	....	....	....	....	9.58	8.75	5.48	2.28	3.48	0.75	2.41	0.31
900	....	....	....	....	....	....	....	....	10.30	10.11	5.75	2.46	3.68	0.83	2.56	0.34
950	....	....	....	....	....	....	....	....	10.72	10.71	6.06	2.87	3.88	0.91	2.70	0.35
1000	....	....	....	....	....	....	....	....	11.32	12.04	6.40	3.02	4.08	1.01	2.84	0.41
1050	....	....	....	....	....	....	....	....	11.90	13.30	6.70	3.21	4.29	1.09	2.98	0.48
1100	....	....	....	....	....	....	....	....	12.50	14.31	7.03	3.51	4.50	1.20	3.13	0.49
1150	....	....	....	....	....	....	....	....	12.95	15.34	7.35	3.84	4.71	1.34	3.27	0.53
1200	....	....	....	....	....	....	....	....	13.52	16.69	7.67	4.26	4.91	1.46	3.41	0.57
1250	....	....	....	....	....	....	....	....	14.10	18.20	8.00	4.45	5.11	1.51	3.55	0.62
1500	....	....	....	....	....	....	....	....	....	....	9.60	6.27	6.10	2.09	4.20	0.85
2000	....	....	....	....	....	....	....	....	....	....	12.70	10.71	8.10	3.50	5.60	1.43
2500	....	....	....	....	....	....	....	....	....	....	....	....	10.10	5.33	7.00	2.18
3000	....	....	....	....	....	....	....	....	....	....	....	....	12.10	7.42	8.40	3.39
3500	....	....	....	....	....	....	....	....	....	....	....	....	14.10	10.08	9.80	3.92
4000	....	....	....	....	....	....	....	....	....	....	....	....	....	....	11.35	5.32
4200	....	....	....	....	....	....	....	....	....	....	....	....	....	....	11.93	6.30
4500	....	....	....	....	....	....	....	....	....	....	....	....	....	....	12.78	6.75
5000	....	....	....	....	....	....	....	....	....	....	....	....	....	....	14.20	8.15

Vel.—velocity feet per second. Fric.—friction head in feet.

Useful Information

No. of U. S. Gallons in Round Tank for One Foot in Depth

Diameter of Tank Ft.	In.	Capacity U. S. Gallons	Cu. Ft. and Area Sq. Ft.	Diameter of Tank Ft.	In.	Capacity U. S. Gallons	Cu. Ft. and Area Sq. Ft.
1	..	5.87	.785	9	..	475.89	63.62
1	1	6.89	.922	9	3	502.70	67.20
1	2	8.	1.069	9	6	530 24	70.88
1	3	9.18	1.227	9	9	558.51	74.66
1	4	10.44	1.396	10	..	587.52	78.54
1	5	11.79	1.576	10	3	617.26	82.52
1	6	13.22	1.767	10	6	647.74	86.59
1	7	14.73	1.969	10	9	678.95	90.76
1	8	16.32	2.182	11	..	710.90	95.03
1	9	17.99	2.405	11	3	743.58	99.40
1	10	19.75	2.640	11	6	776.99	103.87
1	11	21.58	2.885	11	9	811.14	108.43
2	..	23.50	3.142	12	..	846.03	113.10
2	1	25.50	3.409	12	3	881.65	117.86
2	2	27.58	3.687	12	6	918.	122.72
2	3	29.74	3.976	12	9	955.09	127.86
2	4	31.99	4.276	13	..	992.91	132.72
2	5	34.31	4.587	13	3	1031.5	137.89
2	6	36.72	4.909	13	6	1070.8	143.14
2	7	39 21	5.241	13	9	1110.8	148.49
2	8	41.78	5.585	14	..	1151.5	153.94
2	9	44.43	5.940	14	3	1193.	159.48
2	10	47.16	6.305	14	6	1235.3	165.13
2	11	49.98	6.681	14	9	1278.2	170.87
3	..	52.88	7.069	15	..	1321.9	176.71
3	1	55.86	7.467	15	3	1366.4	182.65
3	2	58.92	7.876	15	6	1411.5	188.69
3	3	62.06	8.296	15	9	1457.4	194.83
3	4	65.28	8.727	16	..	1504.1	201.06
3	5	68.58	9.168	16	3	1551.4	207.39
3	6	71.97	9.621	16	6	1599.5	213.82
3	7	75.44	10.085	16	9	1648.4	220.35
3	8	78.99	10.559	17	..	1697.9	226.98
3	9	82.62	11.045	17	3	1748.2	233.71
3	10	86.33	11.541	17	6	1799.3	240.53
3	11	90.13	12.048	17	9	1851.1	247.45
4	..	94.	12.566	18	..	1903.6	254.47
4	1	97.96	13.095	18	3	1956.8	261.59
4	2	102.	13.635	18	6	2010.8	268.80
4	3	106.12	14.186	18	9	2065.5	276.12
4	4	110.32	14.748	19	..	2120.9	283.53
4	5	114.61	15.321	19	3	2177.1	291.04
4	6	118.97	15.90	19	6	2234.	298.65
4	7	123.42	16.50	19	9	2291.7	306.35
4	8	127.95	17.10	20	..	2350.1	314.16
4	9	132.56	17.72	20	3	2409.2	322.06
4	10	138.25	18.35	20	6	2469.1	330.06
4	11	142.02	18.99	20	9	2529.6	338.16
5	..	146.88	19.63	21	..	2591.	346.36
5	1	151.82	20.29	21	3	2653.	354.66
5	2	156.83	20.97	21	6	2715.8	363.05
5	3	161.93	21.65	21	9	2779.3	371.54
5	4	167.12	22.34	22	..	2843.6	380.13
5	5	172.38	23.04	22	3	2908.6	388.82
5	6	177.72	23.76	22	6	2974.3	397.61
5	7	183.15	24.48	22	9	3040.8	406.49
5	8	188.66	25.22	23	..	3108.	415.48
5	9	194.25	25.97	23	3	3175.9	424.56
5	10	199.92	26.73	23	6	3244.6	433.74
5	11	205.67	27.49	23	9	3314.	443.01
6	..	211.51	28.27	24	..	3384.1	452.39
6	3	229.50	30.68	24	3	3455.	461.86
6	6	248.23	33.18	24	6	3526.6	471.44
6	9	267.69	35.78	24	9	3597.9	481.11
7	..	287.88	38.48	25	..	3672.	490.87
7	3	308.81	41.28	25	3	3745.8	500.74
7	6	330.48	44.18	25	6	3820.3	510.71
7	9	352.88	47.17	25	9	3895.6	520.77
8	..	376.01	50.27	26	..	3971.6	530.93
8	3	399.88	53.46	26	3	4048.4	541.19
8	6	424.48	56.75	26	6	4125.9	551.55
8	9	449.82	60.13	26	9	4204.1	562.

To find the capacity of tanks larger than given in the table, set table for tank one-half of the given size, and multiply its capacity by 4, or one of one-third its size and multiply by 9, etc. Thirty-one and one-half gallons equal one barrel. To find the capacity of a square tank, find the capacity of a round tank with diameter same as length of side, and divide by .7854. A 10-foot diameter round tank, 1 foot high, holds 587.52 gallons. A square tank 10x10 feet by 1 foot high equals 587.52 divided by .7854 equals 748 gallons.

Wrought Pipe Data

Number of Threads per Inch of Screw	27	18	18	14	14	11½	11½	11½	11½	8	8	8	8	8	8	8	8	8	8	8
" " Perfect Threads	5.13	5.22	5.40	5.46	5.60	5.87	6.21	6.33	6.67	7.12	7.60	8.00	8.40	8.80	9.28	10.08	10.88	11.68
Total Length of Thread and Length of Taper at Top	.41	.62	.63	.82	.83	1.03	1.06	1.07	1.10	1.64	1.70	1.75	1.80	1.85	1.91	2.01	2.11	2.21
Length of Perfect Thread	.19	.29	.30	.39	.40	.51	.54	.55	.58	.89	.95	1.00	1.05	1.00	1.16	1.26	1.36	1.46
Outside Diameter of Perfect Thread	.405	.540	.540	.840	1.05	1.31	1.66	1.90	2.37	2.87	3.50	4.00	4.50	5.00	5.56	6.62	7.62	8.62
Depth of Thread	.029	.044	.044	.057	.057	.069	.069	.069	.069	.100	.100	.100	.100	.100	.100	.100	.100	.100
Outside Diameter of Thread at End of Pipe	.393	.522	.656	.816	1.025	1.283	1.627	1.866	2.339	2.818	3.443	3.938	4.43	4.93	5.48	6.54	7.54	8.53
Root Diameter of Thread at End of Pipe	.334	.433	.568	.702	.911	1.144	1.488	1.728	2.201	2.618	3.243	3.738	4.233	4.73	5.28	6.34	7.34	8.33
Taper of Thread per Inch of Screw	1/11	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16
Size of Tap Drill	21/64	29/64	19/32	33/64	13/16	15/16	1 7/32	1 7/32	2 1/16	2 5/8	3¼	3¾	4¼	4¾	5 5/16	6 5/16	7⅝	8⅝
Length of Pipe in Feet Containing One Cubic Foot	337.72	185.096	100.785	63.322	36.116	22.280	12.867	9.454	5.736	4.020	2.593	1.947	1.512	1.207	.961	.666	.496	.384
Length of Pipe in Feet Containing One U. S. Gallon	2526.	1383.8	754.36	473.91	270.03	166.62	96.275	70.733	42.913	30.077	19.479	14.565	11.312	9.030	7.197	4.984	3.717	2.878
U.S. Gallons Contained in 1 Lineal Foot of Pipe	.003	.005	.009	.015	.027	.044	.077	.105	.174	.248	.384	.513	.661	.828	1.039	1.500	2.012	2.598
Pounds of Water Contained in One Lineal Foot of Pipe	.024	.045	.082	.131	.230	.374	.647	.881	1.453	2.073	3.201	4.281	5.512	6.905	8.662	12.510	16.774	21.662
Square Feet of Outside or Radiating Surface per Lineal Foot Pipe	.106	.141	.177	.220	.275	.344	.434	.497	.622	.753	.916	1.047	1.178	1.309	1.456	1.734	1.996	.443
Length of Pipe in Feet per Square Foot Inside Surface	14.200	10.494	7.748	6.141	4.636	3.641	2.768	2.372	1.848	1.547	1.145	1.077	.949	.848	.757	.630	.544	.479
Length of Pipe in Feet per Square Foot Outside or Radiating Surface	9.431	7.074	5.059	4.547	3.638	2.905	2.301	2.010	1.608	1.329	1.091	.955	.849	.764	.687	.577	.501	.443

Number of Threads per Inch of Screw	27	18	18	14	14	11½	11½	11½	11½	8	8	8	8	8	8	8	8	8	8	8
Actual Outside Diam.	.405	.540	.675	.840	1.050	1.315	1.660	1.900	2.375	2.875	3.500	4.000	4.500	5.000	5.563	6.625	7.625	8.625	8	8
Actual Inside Diam.	.269	.364	.493	.622	.824	1.049	1.380	1.610	2.067	2.469	3.068	3.548	4.026	4.506	5.047	6.065	7.023	7.981	8.399	8.329
Outside Area	.129	.229	.358	.554	.866	1.358	2.164	2.835	4.430	9.492	9.621	12.566	15.904	19.635	24.306	34.472	45.604	58.426	50.027	50.265
Inside Area	.057	.104	.191	.304	.533	.864	1.496	2.036	3.356	4.778	7.393	9.887	12.730	15.947	20.006	28.890	38.780	50.027	47.857	47.857
Area of Metal	.072	.125	.167	.250	.333	.494	.668	.799	1.074	1.704	2.228	2.679	3.174	3.668	4.300	5.582	6.926	7.981	8.399	8.329
Outside Circum.	1.272	1.696	2.121	2.639	3.299	4.131	5.215	5.969	7.461	9.032	10.996	12.566	14.137	15.708	17.477	20.813	23.955	27.096	25.073	28.900
Inside Circum.	.845	1.144	1.549	1.954	2.589	3.296	4.335	5.058	6.494	7.757	9.638	11.146	12.648	14.156	15.856	19.054	22.063	25.073		
Weight per Foot	.246	.426	.570	.855	1.140	1.690	2.290	2.740	3.690	5.850	7.660	9.240	10.900	12.700	14.900	19.200	23.800	28.900		

Price of Pipe per Foot
Thickness
" Actual Inside Diameter Extra Strong
" Double Extra Strong
" Inches—Total Distance Pipe Screws into Fitting

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Useful Information

Steam Coils for Domestic Purposes

A steam coil immersed in water will condense about 100 times as much steam as it will surrounded by still air.

A brass or copper pipe surrounded by water will give off about 200 thermal units per square foot of surface per hour for each degree difference in temperature between the steam and the surrounding water. This is assuming that the water in the tank or boiler is moving over the coil at a moderate velocity. In assuming the temperature of the water, take the average between that of the inlet and outlet. To arrive at square feet coil necessary to heat any given quantity of water in a given time to a certain temperature—first reduce the gallons of water to pounds; then by taking the temperature of inlet from required temperature we get degrees water is to be raised; these quantities multiplied together give heat units required to raise the water to desired temperature —this will be the dividend. Next get the average temperature by taking half the sum of the inlet and outlet temperature; then find the temperature of the steam and deduct from it the average temperature of the water and multiply by 200 for a divisor. Example: How many square feet of heating surface will be required in a brass coil to heat 120 gallons of water per hour from 40 to 120 degrees with steam at 3 pounds pressure.

Water to be heated.....	120x8⅓=	1000 pounds
Rise in temperature.....	120–40=	80 degrees
Thermal Units required.....	1000x80=	80000 "
Average temperature of water in contact with coils one half of.....	120+40=	80 "
Temperature of steam at 3 pounds pressure.....		220 "
Difference between 220° and average temperature.....	80°=	140 "
Then the B. T. U. per square foot of surface given up to the water.....	140x2000=	28000
Coil required=80000÷28000.....		2.85 sq. ft.

Size of Heater

The size of the heater to warm in one hour the quantity of water to the temperatures given in the example depends upon how much coal is burned per hour per square foot of grate. Five pounds is a fair average for such work, and with good combustion the available heat units per pound of coal is about 8000. As this example requires 80000 heat units to heat the water per hour, the grate surface will equal $\frac{80000}{5\times8000}=2$ square feet.

This requires a heater with 19-inch grate. To heat the water in two hours would require just half the grate or a heater with 14-inch diameter grate. In four hours a heater with 10-inch diameter grate.

Chimney Flues

Areas of chimney flues should approximate one-sixth the listed grate areas of boilers connected to them when the fuel used is hard coal, and one-fifth when soft coal.

No boiler will give the best results if connected to an imperfect chimney flue. The most common defect is lack of capacity, and we frequently find buildings with flues utterly inadequate for the service required. People often burn paper in a chimney, and if the flame is drawn quickly upward the flue is considered equal to any requirement. This is likely to be a serious mistake, and while a strong draft will compensate to some extent for lack of area, the only safe course is to build flues sufficiently large to do their work easily. The difference in cost is not worth considering in view of the trouble to be avoided.

Flues should be perfectly straight, plastered smoothly inside, and never less than eight inches deep. A square flue will have a better draft than an oblong flue of equal area. Round tile flues are best. Flues should be built in inside walls wherever possible, and so located that the smoke pipe shall be very short. They should always be carried above the highest point of the building or adjacent buildings. Sometimes several flues are built in one chimney, all connected together in the ash pit. In such cases, if one of the flues is connected with a fire place, or any other opening, it will spoil the draft, no matter how good the flue may be.

Direct Steam Radia. Sq. Ft.	Horse Power	Size Cnimney In.	Direct Water Radiation Sq. Ft.	Direct Steam Radiation Sq. Ft.	Horse Power	Size Chimney In.	Direct Water Radiation Sq. Ft.
250	2.5	8x 8	400	1400	14.0	12x16	2400
300	3.0	8x 8	500	1600	16.0	12x16	2700
400	4.0	8x 8	700	1800	18.0	12x16	3000
500	5.0	8x12	850	2000	20.0	12x16	3400
600	6.0	8x12	1000	2200	22.0	16x16	3700
700	7.0	8x12	1200	3000	30.0	16x16	5100
800	8.0	12x12	1350	3500	35.0	16x20	5900
900	9.0	12x12	1500	5000	50.0	16x20	8500
1000	10.0	12x12	1700	5500	55.0	20x20	9300
1200	12.0	12x12	2100	8000	80.0	20x20	13000

Sizes of Steam Mains

Single Pipe, Direct Radiation—Pressure .5 Pounds

Radiating Surf. Sq. Ft.	Length Steam Main, Feet 20	40	80	100	200	300	400	600	1000
20	1	1	1¼	1¼	1¼	1¼	1¼	1½	1½
40	1¼	1¼	1¼	1¼	1¼	1¼	1¼	1½	1½
60	1¼	1¼	1¼	1¼	1¼	1¼	1¼	1½	1½
80	1¼	1¼	1¼	1¼	1¼	1¼	1¼	1½	2
100	1¼	1½	1½	1½	1½	1½	1½	1½	2
200	1½	1½	2	2	2	2	2	2½	3
300	2	2	2	2	2	2½	2½	3	3½
400	2	2	2½	2½	2½	3	3	3	4
500	2	2½	2½	3	3	3	3½	3½	4
600	2½	2½	3	3	3	3½	3½	4	4½
800	2½	3	3½	3½	3½	3½	4	4	5
1000	3	3½	3½	4	4	4	4	4½	6
1400	3½	3½	4	4	4	4½	4½	5	6
1800	4	4	4	4	4½	5	5	6	7
2000	4	4	4	4½	4½	5	5	6	7
3000	4½	4½	4½	5	5	6	6	7	8
4000	5	5	5	6	6	7	7	7	9
6000	5½	5½	6	7	7	7	7	8	10
8000	5½	5½	6	7	7	8	8	9	11
10000	6	6	6	7	8	8	9	10	12

For obtaining the size of steam main to be used in case there is a separate return, multiply the above by 0.82.

Allowance must be made for pipes hung low, with slight grade, or for long or crooked runs.

The size of branch connections to the radiators is usually determined by the tapping of the radiator supplied.

Size of Steam Mains

Two-pipe System

This table may be used for all ordinary conditions of domestic installations.

Main Assumed 100 Feet In Length

Size Main In.	Radiation Sq. Ft.	Diameter of Return Inches Dry	Sealed	Diam. Drip for Main In.
1¼	80	1	1	¾
1½	200	1¼	1	¾
2	400	1½	1¼	¾
2½	640	2	1½	¾
3	1000	2	2	1
3½	1500	2½	2	1
4	2000	3	2½	1
4½	2500	3	2½	1¼
5	3600	3½	3	1¼
6	5000	4	3½	1¼

Hot Water Systems

The following table will be found useful in computing the size of mains for hot water open tank system:

Quantity of Rad't'g Surface Up to Which the Ratio Can be Used	Ratio in Sq. In. Main to 100 Ft. Surface at Boiler	Ratio Main to 100 Feet Surface 15 Feet from Boiler	Ratio Main to 100 Feet Surface 30 Feet from Boiler	Ratio Main to 100 Feet Surface 45 Feet from Boiler	Ratio Main to 100 Feet Surface 60 Feet from Boiler	Ratio Main to 100 Feet Surface 75 Feet from Boiler	Ratio Main to 100 Feet Surface 90 Feet from Boiler
400	1.20	1.30	1.40	1.50	1.60	1.70	1.80
800	1.10	1.20	1.30	1.40	1.50	1.60	1.70
1200	1.00	1.10	1.20	1.30	1.40	1.50	1.60
2000	.90	1.00	1.10	1.20	1.30	1.40	1.50
3500	.80	.90	1.00	1.10	1.20	1.30	1.40
5700	.70	.80	.90	1.00	1.10	1.20	1.30
8500	.60	.70	.80	.90	1.00	1.10	1.20
12500	.50	.60	.70	.80	.90	1.00	1.10

Example: 350 feet of water radiation, find size of main required at boiler. 350x1.20 4.20 area of pipe.

Steam Boilers

May be classed under two heads, as all are, without exception, either fired externally or internally. The relative economy of the two systems is largely determined by the furnace construction, plus or minus the loss of heat by radiation in the same.

The loss in boilers fired externally consists in the radiation of heat through the brick setting, while in boilers fired internally the fuel is consumed in close contact with the furnace sheets which are a component part of the boiler structure, and as the heat is transmitted directly to the water which surrounds the furnace, the loss by wasteful radiation is comparatively small. Hence, practice bears out the statement of Stephen Roper, the eminent engineer, that the internally fired is the most economical type, and that such a boiler will save its cost in less than its reasonable life.

Boiler Horse-power

Conditions modify all calculations in determining the horse-power of a boiler, such as design, quality of the material of which it is made, facilities for cleaning, impurities in the water, calorific power of fuel used, attendance, and draught of chimney, etc.

Moreover, no dogmatic set of rules will insure satisfactory results in every case of boiler construction, as the factors of grate and heating surface, temperature of feed water, proper control of air to support combustion, steam and water space, circulation of water within the boiler, all vary with each type of boiler used, and even with different proportions in the same type. Hence this article is only intended to give an approximate statement of the case as shown in existing formulas.

Approximately, the horse-power, if externally fired, may be calculated by multiplying in inches ⅔ of the circumference of the shell by its length, then multiply the product of the area of all the flues or tubes by their length, add these products together and divide by 144 to find square feet, then divide this quotient by 14. 144 represents the square feet of heating surface in the shell, tube and flues, and 14 the square feet of heating surface usually allowed per horse-power.

For internally fired boilers multiply in inches the circumference or square of furnace by its height, then multiply the circumference of one tube by its length, and this product by the entire number of tubes, taking into account also the square inches of surface presented by the crown or tube sheet. Add these quantities together and divide by 144, the quotient will be the heating surface in square feet, and this, when divided by 14, the last quotient will be the horse-power.

With a good draught for the furnace, 10 square feet of heating surface, ½ a square foot of grate surface, 8 lbs. of good coal and 1 cubic foot of water evaporated per hour may be estimated for each nominal horse-power that the boiler should develop.

For Cylindrical Boilers

Each nominal horse-power requires 1 cubic yard capacity, 1 square yard of heating surface, 1 square foot of grate bar surface, 1 cubic foot of water evaporated per hour and 28 square inches of flue area. The area for entrance of air to ash pit should be ¼ of area of grate; depth of ash pit, 1 foot 6 inches to 2 feet 6 inches.

The grate-bars should incline downwards towards the front, 1 inch per foot; not over ¾ inch thick and ⅜ to 7/16 inch spaces between.

The furnace should have at least 3 cubic feet of space above each square foot of grate surface.

For Horizontal Tubular Boilers

The length of tubes should be 48 times the diameter. For soft coal 4-inch diameter gives the best results, with 1 inch space between the tubes, and 2½ inch space between tubes and shell of boiler. Tubes should be set in vertical rows to facilitate cleaning.

Linear Expansion of Steam Pipes

The linear expansion and contraction of pipe, due to differences of temperature of the fluid carried and the surrounding air, must be cared for by suitable expansion joints or bends.

The table below shows the increase in length of a pipe 100 feet long at various temperatures.

The expansion for any length of pipe is found by taking the difference in increased length at the minimum and maximum temperatures, dividing by 100 and multiplying by the length of the line under consideration.

Temp. Deg. F.	Inches Per 100 Feet — Steel	Wrought Iron	Brass	Copper	Temp. Deg. F.	Inches Per 100 Feet — Steel	Wrought Iron
0	0	0	0	0	520	4.39	4.58
20	.15	.155	.25	.25	540	4.59	4.78
40	.30	.31	.45	.45	560	4.78	4.975
60	.455	.475	.67	.65	580	4.975	5.175
80	.61	.63	.92	.87	600	5.17	5.38
100	.77	.80	1.17	1.10	620	5.365	5.58
120	.915	.96	1.41	1.35	640	5.565	5.785
140	1.075	1.13	1.69	1.57	660	5.765	5.99
160	1.235	1.29	1.91	1.77	680	5.965	6.20
180	1.40	1.46	2.15	2.00	700	6.17	6.42
200	1.57	1.64	2.43	2.25	720	6.375	6.625
220	1.73	1.81	2.71	2.52	740	6.58	6.835
240	1.89	1.98	2.97	2.74	760	6.79	7.05
260	2.065	2.16	3.22	2.95	780	6.99	7.275
280	2.23	2.335	3.47	3.17	800	7.21	7.49
300	2.41	2.52	3.76	3.42	820	7.415	7.73
320	2.59	2.70	4.07	3.70	840	7.63	7.93
340	2.76	2.87	4.30	3.95	860	7.84	8.145
360	2.935	3.05	4.58	4.15	880	8.055	8.37
380	3.11	3.235	4.85	4.40	900	8.28	8.60
400	3.29	3.43	5.14	4.64	920	8.495	8.82
420	3.465	3.62	5.45	4.89	940	8.72	9.05
440	3.65	3.805	5.73	5.15	960	8.945	9.28
460	3.835	4.00	5.96	5.37	980	9.17	9.52
480	4.02	4.19	6.25	5.64	1000	9.40	9.75
500	4.21	4.39	6.55	5.88	....	....	....

Useful Information

Water Required per Minute to Feed Boilers

Using the Centennial Standard 30 pounds or 3.6 gallons of water per h.p. per hour, evaporated from 100° Fahrenheit to 70 pounds steam pressure per square inch.

H.P. Boiler	Feed Water Gal.	H.P. Boiler	Feed Water Gal.	H.P. Boiler	Feed Water Gal.	H.P. Boiler	Feed Water Gal.	H.P. Boiler	Feed Water Gal.
20	1.2	60	3.6	110	6.6	190	11.4	400	24.0
25	1.5	65	3.9	120	7.2	200	12.0	450	27.0
30	1.8	70	4.2	130	7.8	225	13.5	500	30.0
35	2.1	75	4.5	140	8.4	250	15.0	600	36.0
40	2.4	80	4.8	150	9.0	275	16.5	700	42.0
45	2.7	85	5.1	160	9.6	300	18.0	800	48.6
50	3.0	90	5.4	170	10.2	325	19.5	900	54.0
55	3.3	100	6.0	180	10.8	350	21.0	1000	60.0

Useful Information

Friction of Water in 90-Degree Elbows

Equivalent Number of Feet Straight Pipe

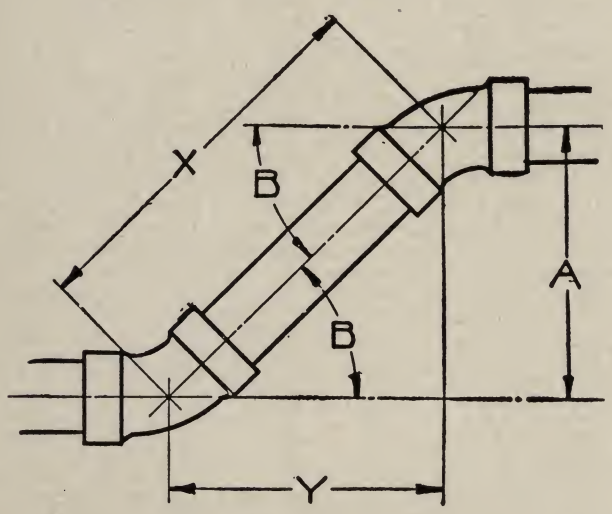
Size of Elbow.....in.	¼	⅜	½	¾	1
*Friction Equivalent.....	3	4	5	6	6
Size of Elbow.....in.	1¼	1½	2	2½	3
*Friction Equivalent.....	8	8	8	11	15
Size of Elbow.....in.	4	5	6	8	10
*Friction Equivalent.....	16	18	18	24	30
Size of Elbow.....in.	12	14	15	16	20
*Friction Equivalent.....	40	54	55	55	70
Size of Elbow.....in.	24	30	36	42	48
*Friction Equivalent.....	80	100	120	140	160

*Straight pipe.

The figures given are based on the assumption that the total velocity head of the water flowing through the elbow is used up to overcome the friction.

Formula for Offset Connections

Used in General Practice



X (Center to Center)—A (Offset) Multiplied by Constant
Y (Center to Center)—A (Offset) Multiplied by Constant

B-Angle	Constant For X	Constant For Y	B-Angle	Constant For X	Constant For Y
60 Degrees	1.15	.58	22½ Degrees	2.61	2.41
45 "	1.41	1.00	11¼ "	5.12	5.02
30 "	2.00	1.73	5⅝ "	10.20	10.15

Air Required for Ventilation

An adult must have each hour for respiration and transpiration 215 feet or 215x.077=16.55 pounds, and generates 290 B.T.U., of which 99 units are in form of vapor and 191 units radiate to surrounding objects.

Good practice requires not less than 1800 cubic feet of air per hour to cover all requirements for each person.

Each cubic foot gas burned requires 8.5 cubic feet air.

Each pound oil burned requires 150 cubic feet air. Each pound candles burned requires 160 cubic feet air. B.T.U. generated by adult per hour, 191. B.T.U. generated by burning 1 cubic foot gas, 600. B.T.U. generated by burning 1 pound oil or candles, 15000 to 18000.

Average gas burner consumes approximately 4 cubic feet gas per hour, which equals 2400 per hour. Each flame from oil lamp, 430 to 515 B.T.U. per hour. Each candle 454 to 545 B.T.U. per hour. B.T.U.—British Thermal Units.

Relative Value of Non-conductors

Non-conductors	Value	Non-conductors	Value
Wool Felts	1.000	Loam, Dry and Open	.550
Mineral Wool, No. 2	.832	Slacked Lime	.480
" " with Tar	.715	Gas-house Carbon	.470
Sawdust	.680	Asbestos	.363
Mineral Wool, No. 1	.676	Coal Ashes	.345
Charcoal	.632	Coke, in Lumps	.277
Pine Wood, Across Fibre	.553	Air Space, Undivided	.186

Boiling Points of Various Fluids

	Degrees		Degrees
Water, Atmospheric Pressure	212	Turpentine	315
Alcohol	173	Sulphur	570
Sulphuric Acid	240	Linseed Oil	597
Refined Petroleum	316	.....	....

Table of Mains and Branches

Main	Supply	
1 -in. Will Supply	2	¾-in.
1¼ " " "	2	1 "
1½ " " "	2	1¼ "
2 " " "	2	1½ "
2½ " " "	2 1½-in. and 1 1¼-in. or 1 2 -in. and 1	1¼ "
3 " " "	1 2½ " " 1 2 " " 2 2 " " 1	1½ "
3½ " " "	2 2½ " or 1 3 " and 1 2 " or 3	2 "
4 " " "	1 3½ " and 1 2½ " or 2 3 " " 4	2 "
4½ " " "	1 3½ " " 1 3 " " 1·4 " and 1	2½ "
5 " " "	1 4 " " 1 3 " " 1 4½ " " 1	2½ "
6 " " "	2 4 " " 1 3 " " 1 3 " or 10	2 "
7 " " "	1 6 " " 1 4 " " 4 4 " and 1	2 "
8 " " "	2 6 " " 1 5 " " 5 4 " " 2	2 "

Table Giving the Circumference and Area of Circles

Diam., In.	Circum., In.	Area, In.	Diam., In.	Circum., In.	Area, In.
⅛	.3926	.0122	41	128 81	1320.25
¼	.7854	.0491	42	131 95	1385.44
⅜	1.178	.1104	43	135 09	1452.20
½	1.570	.1963	44	138.23	1520.53
⅝	1.963	.3067	45	141.37	1590.43
¾	2.356	.4417	46	144.51	1661.90
⅞	2.748	.6013	47	147.65	1734.94
1	3.141	.7854	48	150.80	1809.56
1⅛	3.534	.9940	49	153.94	1885.74
1¼	3.927	1.227	50	157.08	1963.50
1⅜	4.319	1.484	51	160.22	2042.82
1½	4.712	1.767	52	163.36	2123.72
1⅝	5.105	2.073	53	166 50	2206.18
1¾	5.497	2.405	54	169.65	2290.22
1⅞	5.890	2.761	55	172.79	2375.83
2	6.283	3.141	56	175.93	2463.01
2¼	7.068	3.976	57	179.07	2551.76
2½	7.854	4.908	58	182.21	2642.08
2¾	8.639	5.939	59	185.35	2733.97
3	9.424	7.068	60	188.50	2827.43
3¼	10.21	8.295	61	191.64	2922.47
3½	10.99	9.621	62	194.78	3019.07
3¾	11.78	11.044	63	197.92	3117.25
4	12.56	12.566	64	201.06	3216.99
4½	14.13	15.904	65	204.20	3318.31
5	15.70	19.635	66	207.34	3424.29
5½	17.27	23.758	67	210.49	3525.65
6	18.84	28.274	68	213.63	3631.68
6½	20.42	33.183	69	216.77	3739.28
7	21.99	38.484	70	219.91	3848.46
7½	23.56	44.178	71	223.05	3959.20
8	25.13	50.265	72	226.19	4071.50
8½	26.70	56.745	73	229.34	4185.39
9	28.27	63.617	74	232.48	4300.84
9½	29.84	70.882	75	235.62	4417.86
10	31.41	78.54	76	238.76	4536.46
10½	32.98	86.59	77	241.90	4656 64
11	34.55	95.03	78	245.04	4778.36
11½	36.12	103.86	79	248.19	4901.67
12	37.69	113.09	80	251.33	5026.55
12½	39.27	122.71	81	254.47	5153.0
13	40.84	132.73	82	257.61	5281.02
13½	42.41	143.13	83	260.75	5410.61
14	43.98	153.93	84	263.89	5541.77
14½	45.55	165.13	85	267.04	5674.50
15	47.12	176.78	86	270.18	5808.80
15½	48.69	188.69	87	273.32	5944.68
16	50.26	201.06	88	276.46	6082.12
16½	51.83	213.82	89	279.60	6221.14
17	53.40	226.98	90	282.74	6361.73
17½	54.97	240.52	91	285.88	6503.88
18	56.54	254.46	92	289.03	6647.61
18½	58.11	268.80	93	292.17	6792.91
19	59.69	283.52	94	295.31	6939.78
19½	61.26	298.64	95	298.45	7088.22
20	62.83	314.16	96	301.59	7238.23
20½	64.40	330.06	97	304.73	7389.81
21	65.97	346.36	98	307.88	7542.96
21½	67.54	363.05	99	311.02	7697.69
22	69.11	380.13	100	314.16	7853.98
22½	70.68	397.60	101	317.30	8011.85
23	72.25	415.47	102	320.44	8171.28
23½	73.82	433.73	103	323.58	8332.29
24	75.39	452.39	104	326.73	8494.87
24½	76.96	471.43	105	329.87	8659.01
25	78.54	490.87	106	333.01	8824.73
26	81.68	530.93	107	336.15	8992.02
27	84.82	572.55	108	339.29	9160.88
28	87.96	615.75	109	342.43	9331.32
29	91.10	660.52	110	345.58	9503.32
30	94.24	706.86	111	348.72	9676.89
31	97.38	754.76	112	351.86	9852.03
32	100.53	804.24	113	355.00	10028.75
33	103.67	855.30	114	358.14	10207.03
34	106.81	907.92	115	361.28	10386.89
35	109.96	962.11	116	364.42	10568.32
36	113.10	1017.88	117	367.57	10751.32
37	116.24	1075.21	118	370.71	10935.88
38	119.38	1134.11	119	373.85	11122.02
39	122.52	1194.59	120	376.99	11309.73
40	125.66	1256.64	121	380.13	11499.01

Rules and Tables on Horse Power

Rules and Tables

$$H.\ P. = \frac{P\text{-}L\text{-}A\text{-}N}{33{,}000}$$

P—Pounds Pressure per Square Inch
L—Length of Stroke in Feet
A—Area of Piston in Square Inches
N—Number of Revolutions per Minute

Horse Power

Horse power is an amount of mechanical force capable of raising 33,000 pounds 1 foot high, per minute.

Rule to Find Horse Power of an Engine

Area of piston in inches, multiply by pressure per square inch, multiply by speed of piston in feet per minute, and that product divided by 33,000.

The pressure per square inch should be the mean pressure throughout the stroke exerted on the piston, which can be found by attaching an indicator to the engine. The result will be what engineers term, indicated horse power.

For the net effective horse power, deduct from the above 6 to 20 percent depending on the size, for friction of the working parts.

When the indicator is not used, and in the calculation the boiler pressure is substituted for the mean effective pressure, deduct from the result obtained from 40 to 60 per cent for loss by condensation and friction of steam in pipes and passages, decrease of pressure in cylinder due to expansion, back pressure of exhaust, and friction of the working parts.

For engines from 20 to 60 horse power, an average of 50 per cent may be deducted; for smaller engines more.

The mean pressure in the cylinder when cutting off at

1/4	stroke	equals	boiler	pressure	multiplied	by	.597
1/3	"	"	"	"	"	"	.670
3/8	"	"	"	"	"	"	.743
1/2	"	"	"	"	"	"	.847
5/8	"	"	"	"	"	"	.919
2/3	"	"	"	"	"	"	.937
3/4	"	"	"	"	"	"	.966
7/8	"	"	"	"	"	"	.992

The horse power of boilers is best defined by the heating surface and is different according to their construction. A tubular boiler will give 1 horse power to every 12 square feet of heating surface, and a locomotive type boiler 10 square feet gives 1 horse power. There is no standard law governing the horse power of steam boilers. The generally accepted definition is the evaporation of 34½ pounds of water from a temperature of 212°, into steam at the same temperature (1915 Power Test Code A. S. M. E.) Present day boilers can be driven at 200 to 300 per cent of their capacity for short periods.

1 cubic foot of water evaporated per hour = 1 nominal horse power.

7½ pounds of coal consumed per hour will evaporate 1 cubic foot of water = 1 horse power.

1 square foot of grate will consume on average 12 pounds of coal per hour = 1⅗ horse power.

A theoretically perfect steam engine consumes 33/50 pounds of coal per hour, per horse power.

Fuel

One pound of coal will evaporate from 7 to 10 pounds of water.

One pound of dry pine wood will evaporate from 4 to 5 pounds of water.

One ton of anthracite coal requires a space of 42 cubic feet.

One ton of bituminous coal requires a space of 44 cubic feet.

One ton of coke requires a space of 90 cubic feet.

For the combustion of one pound of coal 150.35 cubic feet of air are required.

Useful Information About Belting

When ordering belting the following should be observed:

Give horse power requirements as near as possible.

Give belt speed as near as possible.

Give diameter of both pulleys.

State whether belt will run straight, crossed or quarter-twist. Also any other special conditions.

Describe kind of machinery belt will be used for.

Avoid belts too thick for proper contact and adhesion to pulleys, considering diameter and speed.

Run single leather belts with grain side against pulleys.

In specifying endless belts or with laps to be made endless, give net length around pulleys and state to "add for lap and make endless" or to "scarf laps and leave open."

Also state whether any allowance has been made for stretch or whether net steel tape line length is given.

Belting should be maintained at sufficient tension, according to speed to secure continuous contact with pulleys. Belting when running develops centrifugal force, which has tendency to throw belt away from pulley, which decreases the amount of power transmitted and can only be remedied by tension.

Contact of belts with pulleys should be half around each pulley, which is 180 degrees, as near as possible. When pulleys are of different diameters contact with smaller pulley is less than 180 degrees, unless belt is run with tightener or with sufficient slack on top side of drive, which will increase contact with smaller pulley from sagging of belt.

In locating shafting and pulleys that are to be connected with each other by belts, care should be taken to secure a proper distance one from the other.

If too great a distance is attempted the weight of the belt will produce a heavy sag, drawing so hard on the shafting as to produce great friction on the bearings; the belt will also have an unsteady flapping motion, which will destroy the belt.

The whole arrangement of shafting and pulleys should be under the direction of a competent mechanical engineer. Destruction of machinery and belting, together with unsatisfactory results in the business, is a common experience, which, in most cases, can be traced to the want of knowledge and care in the placing of the machinery, and with the width and weight of belts bought and in the way they are used, while the makers of the machines and the belts (especially the latter), are often blamed for bad results.

Always run the grain side next to the pulley.

Never run the point of the laps toward the pulley.

Always keep it where it is dry unless belt is waterproof.

Never try to keep a belt on pulleys by arranging timbers or other contrivances against the side of belt.

Always see that the pulleys are in proper line, and the belt will stay on without holding, if pulleys are properly contructed.

Pulleys where belt is not shifted should be crown face, and where belt is to be shifted they should be straight face.

Tight and loose pulleys should be crown face.

To find circumference of a pulley, multiply diameter by 3.1416.

To find desired speed of belt for given horse power: multiply horse power by 800 and divide by width of belt in inches. Correct in proportion by actual contact compared with basic contact of 180 degrees.

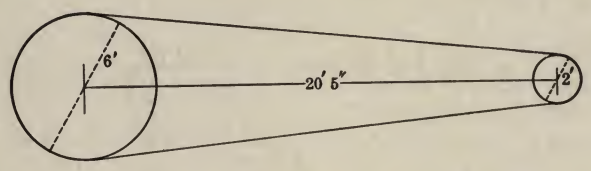
To find speed of belt from speed of pulleys: Multiply the diamater of either pulley in feet by 3.1416 by number of revolutions per minute of pulley, the result being the number of feet of velocity per minute.

To find diameter of driven pulley: Necessary to obtain a number of given revolutions, when the diameter and speed of driving pulley are known. Multiply the revolutions of the driving pulley by the diameter of the driving pulley and divide by the required number of revolutions of driven pulley.

To find diameter of driving pulley: When necessary to obtain speed required on driven pulley. The speed of the shaft and diameter of driven pulley being known. Multiply the diameter of the driven pulley by number of revolutions of driven pulley and divide by number of revolutions of driving pulley.

Rules for Measuring Belts

Rule 1—For Finding Length of Straight Belts



A.—Multiply one half the sum of the diameters of the pulleys by 3⅐.

B.—Add to above twice the distance between centers.

C.—If one pulley is much larger than the other, it is necessary to add to the above a sum varying from one to ten or twelve inches, or more, and obtained by the following method: Square the difference in the diameters in pulleys in inches and divide by four times the distance between centers in inches.

EXAMPLE

Large pulley, 58″.
Small pulley, 12″.
Distance between centers, 10′=120″.
To find A—58″+12″=70″; 70″×½=35″; 35″×3⅐=110″.
To find B—10′=120″; 2×120″=240″.
To find C—58″—12″=46″.
46″ squared=2116″.
4 times distance between centers is 4×120″=480″.
2116″ divided by 480=5″ approximately.
Total length A+B+C=110″+240″+5″=29′7″, answer.

Rule 2—For Finding Length of Cross Belts

A.—Multiply one half the sum of the diameters of the pulleys by 3⅐.

B.—Square one-half the sum of the diameters of the pulleys. Square the distance between centers. Add these two squares and take the square root. Multiply this by 2 and add to the result found in paragraph A.

EXAMPLE

Large pulley, 58″.
Small pulley, 12″.
Distance between centers, 10′=120″.
To find A—Same as Rule 1=110″.
To find B—Half the sum of the diameters of the pulleys =35″.
Square 35″=1225″.
Square distance between centers (120″)=14400″.
Add 1225″ and 14400″=15625″.
The square root of 15625″=125″.
Twice 125″=250″.
A+B=110″+250″=360″=30′, answer.

Rule for Measuring Belts in the Roll

Add to the diameter of the roll in inches the diameter of the hole in the center of the roll. Multiply this sum by the number of coils in the roll, and multiply this product by .132. The three figures on the left represent number of feet in roll.

EXAMPLE

Roll of 5-inch single leather belt measures 37⅝ inches in diameter; hole, 4⅝ inches in diameter; number of coils in roll, 84:

37⅝+4⅝=42¼×84=3,549×.132=468,468; or (taking the first three figures on the left) equals 468½ feet.

Length of roll by actual measurement, 469 feet.

Rules for Piecing out Belts

In order to calculate the changed length of belt when different size pulley is put on in place of one removed, take out of the belt, or put in one and a half times the difference of the diameter of the pulleys.

EXAMPLE

Take off a 20-inch pulley and put on a 24-inch=4-inch×1½ inch=6-inch of a new belt to the existing one.

Average Net Weights of Rubber Belting

Size Inches	Weight, Pounds, per 100 Feet — No. of Plies: 3	4	5	6	7	8	9	10	11
2	17	21	..	..	..	...	...	...	...
3	26	32	38	..	..	...	...	...	...
4	35	42	50	59	67	...	...	...	...
5	42	53	63	73	84	...	...	...	...
6	52	63	75	88	100	113	...	...	...
7	..	74	88	103	117	132	...	...	...
8	..	84	100	117	134	151	168	...	...
9	..	95	113	132	150	170	189	...	...
10	..	105	126	147	167	188	210	231	...
11	..	116	138	161	184	207	231	254	...
12	..	126	151	176	201	226	252	277	302
13	..	...	163	190	217	245	273	300	327
14	..	...	176	205	234	264	294	323	353
15	..	...	188	220	251	285	315	346	378
16	..	...	201	234	268	301	336	369	403
18	..	...	226	264	301	339	377	415	453
20	..	...	251	293	334	377	419	462	504
22	..	...	276	322	368	414	461	508	554
24	..	...	301	352	401	452	503	554	605
26	..	...	327	381	435	490	545	600	655
28	..	...	352	410	468	528	587	646	705
30	..	...	377	440	502	565	629	692	756

Weights of larger sizes in proportion.

Horse Power of Rubber Belting

An easily remembered horse power rule on which to base mental calculations for rubber belting is that a 4-ply rubber belt, running 4000 feet per minute, will transmit 5 horse power per inch of width. Proportionate powers for other plies and speeds.

In comparing rubber and leather beltings the relative power transmission values are generally considered to be as follows:

3 or 4-ply rubber belt=single leather belt
5 " 6 " " " =double " "
7 " 8 " " " =triple " "

For general horse power calculations we offer to power users a new formula of utmost simplicity and perfect reliability. Its chief advantage lies in the fact that it covers all plies of belting and does not require multiplying by odd fractions when other than 4-ply belt is considered. It may be depended upon as perfectly correct and as giving average results, applicable in all usual work. For special cases its results may be increased or decreased according to the judgment of the user.

$$H = PWDN \div 12000$$

wherein

H=Horse power.
P=Number of plies in the belt.
W=Width of belt in inches.
D=Diameter of pulley in inches.
N=Revolutions of pulley per minute.

Use of the Formula

By this formula any problem in rubber belting may be solved, as per the following rule and example:

To find the horse power of any rubber belt: Multiply together the number of plies in the belt, its width in inches, the pulley diameter in inches, and the speed in revolutions per minute, then divide by 12000.

EXAMPLE.—4-ply belt, 6 inches wide; 24-inch pulley; 400 revolutions per minute. 4×6×24×400÷12000=19.2 horse power.

Useful Information

Miscellaneous

To find the diameter of a circle, multiply the circumference by .31831.

To find the circumference of a circle, multiply the diameter by 3.1416.

To find the area of a circle, multiply the square of the diameter by .7854.

To find the surface of a ball, multiply the square of the diameter by 3.1416.

To find the side of an equal square, multiply the diameter by .8862.

To find the cubic inches in a ball, multiply the cube of the diameter by .5236.

To double the diameter of a pipe, increase its capacity four times.

Double riveting is from 16% to 20% stronger than single.

One cubic foot of anthracite coal weighs about 53 pounds.

One cubic foot of bituminous coal weighs from 47 to 50 pounds.

One ton of coal is equivalent to 2 cords of wood for steam purposes.

A gallon of water (U. S. Standard) weighs 8⅓ pounds, and contains 231 cubic inches.

A cubic foot of water contains 7½ gallons, 1728 cubic inches, and weighs 62½ pounds.

To sharpen dull files, lay them in dilute sulphuric acid until they are eaten deep enough.

A horse power is equivalent to raising 33000 pounds 1 foot per minute or 550 pounds 1 foot per second.

To find the pressure in pounds per square inch of a column of water, multiply the height of the column in feet by .434.

Steam rising from water at its boiling point (212°) has a pressure equal to the atmosphere (14.7 pounds to the square inch).

To evaporate 1 cubic foot of water, the consumption of 7½ pounds of ordinary coal or about 1 pound of coal to 1 gallon of water is required.

One-sixth of tensile strength of plate multiplied by thickness of plate and divided by one-half the diameter of boiler gives safe working pressure for tubular boilers. For square marine boilers, add 20% for drilled holes.

No plate or bars of either steel or iron should be worked at a black or blue heat (say about 500°); the material will stand far more strain either red hot or cold, while at an intermediate point, great risk will be run, and possible strains produced which result in rupture later on.

A miner's inch of water is approximately equal to a supply of 12 U. S. gallons per minute.

The mean pressure of the atmosphere is estimated at 14.7 pounds per square inch, so that with a perfect vacuum it will sustain a column of water 33.9 feet high.

A cubic inch of water evaporated under atmospheric pressure is converted into approximately 1 cubic foot of steam.

The horse power of boilers, as per standard adopted by the Am. S. M. E. is 30 pounds water evaporated per hour at a pressure of 70 pounds per square inch and from a temperature of 100°F.

Well designed boilers under successful operation will evaporate from 7 to 10 pounds of water per pound of first-class coal.

Each square foot of heating surface is considered sufficient to evaporate 2 pounds of water; therefore, for an engine using 30 pounds water per horse power per hour, each horse power of the engine requires 15 square feet heating surface in the boiler.

On one square foot of fire grate can be burned on an average from 10 to 12 pounds hard coal, or 18 to 20 pounds soft coal, per hour, with natural draft.

Two and one-quarter pounds of dry wood is equal to 1 pound of average quality soft coal.

There is a saving of about 1% in fuel burned for every 11° feed water that is warmed. With sufficient exhaust steam available, if cold water at 70° is raised to 210°F., the saving of fuel will approximate 12%.

Designers of steam piping figure on a steam travel of about a mile and a half per minute. Very often it is much more than this.

The friction of water in pipes is as the square of velocity.

The capacity of pipes is as the square of their diameters; thus, doubling the diameter of a pipe increases its capacity four times.

The height of a column of fresh water, equal to a pressure of one pound per square inch, is 2.31 feet. (In usual computation this is taken at 2 feet, thus allowing for ordinary friction.)

To find the capacity of a cylinder in gallons: Multiplying the area in inches by the length of stroke in inches will give the total amount of cubic inches; divide this amount by 231 (the cubical contents of a U. S. gallon in inches) and the product is the capacity in gallons.

Metals

The following table has been made after consulting various authorities. While not entirely correct it is sufficiently so for comparison.

Melting Point Degrees	Weight per Cubic Foot in Pounds	Weight per Cubic Inch in Pounds	Tensile Strength per Square Inch	Specific Gravity
		Aluminum		
1300	162	.089	23000	2.600
		Aluminum Bronze—10 per cent		
1700	485	.280	80000	7.560
		Ajax Metal		
1850	545	.315	Cast 38000 Wire 96000	8.400
		Antimony		
790	418	.244	1000	8.710
		Brass, Common		
1500—1900	539	.312	Cast 20000 Wire 49000	8.300
		Bronze		
1850	545	.315	Cast 32000 Wire 65000	8.400
		Bismuth		
518	616	.355	Cast 3200	9.900
		Copper		
1850	550	.318	Cast 22500 Wire 60000	8.600 8.800
		Copper Wire		
	555	.32	Cast 22500 Wire 60000	8.600 8.800
		Crown Bronze		
1850	545	.315	Cast 37500 Wire 90000	8.400
		Glass		
1600—2300	180	.180		3.
		Gun Metal—9 Copper, 1 Tin		
1850	545	.315	Cast 32000 Wire 90000	8.400
		Iron, Cast—Average		
2700	450½		16000—23500	6.210
		Iron, Pig—Average		
2200—3000			1st Melting 18000 2nd " 20000 Plates 52000	
		Iron, Wrought		
3800	480½	.280	Bar, Best 58000 Wire 95000	7.698
		Iron, Wrought—Welding		
2400				
		Lead		
620	712	.410	Cast 1800 Pipe 2100	11.330
		Manganese Bronze		
1800	525	.300	Cast 57000 Rolled 105000	8.400
		Nickel		
2900	1342	.299		8.100
		Phosphor-Bronze		
1850	550	.320	Cast 38500 Wire 96000	8.500
		Platinum		
4500	1342	.761	Wire 53000	21.842
		Steel		
2550	490	.286	Plates 60000 Wire 120000	7.919
		Tin		
512	459	.264	Cast 4600 Wire 7000	7.300
		Zinc		
775	424	.248	Cast 2900 Wire 20000	6.860

Comparative Weight of Metals

Metals	Weight per Square Foot 1 Inch Thick	Approximate Percentage Heavier than Iron	Approximate Percentage Lighter than Iron
Iron, Rolled	40.	.....	.....
Steel, "	40.833	2	.....
Aluminum, Rolled	14.126	.....	62.91
Brass, Rolled	43.68	7	.....
Copper "	46.51	13	.....
Gold "	100.8	250	.....
Lead "	59.80	50	.....
Nickel "	43.2	7	.....
Silver "	54.75	36⅞	.....
Tin "	38.	.....	5
Zinc "	37.6	.....	6.6

Comparative Strength of Metals

Metals	Length of a Bar able to Support its Own Weight in Feet
Cast Iron	5.351
Hard, Structural Steel	23.040
Aluminum	23.040
Ordinary Bronze	9.893
Wrought Iron	15.

Useful Information

Comparison of Wire Gauges

OWING to the different systems of gauge numbers used in connection with the various materials that we handle, we deem it of prime importance to give a table showing the values (or thicknesses) of the gauges most commonly referred to. While material can usually be made according to any gauge system, custom has dictated usages, a few of which are mentioned below.

Band and hoop iron or steel and tank steel plates are rolled to Birmingham Wire Gauge.

Sheet steel is rolled to U. S. Standard Gauge.

Steel wire (except telephone and telegraph) is drawn to Washburn & Moen Gauge, but is used by most wire makers under their own name.

Steel or iron telephone and telegraph wire is generally drawn to Birmingham Wire Gauge.

Copper wire is drawn to Brown & Sharpe's Gauge.

Sheet copper, brass, bronze and German silver are rolled to Brown & Sharpe's Gauge.

Sheet zinc is rolled according to a "zinc gauge," and is used by sheet zinc manufacturers under their own names.

Comparison of Wire Gauges

(Thicknesses of Gauge Numbers are given in Decimals of an Inch)

Fractions of Inch	U. S. Standard Ga. No.	U. S. Standard Thickness	Stubs, Birmingham, English Standard Ga. No.	Stubs, Birmingham, English Standard Thickness	B. & S. and American Ga. No.	B. & S. and American Thickness	Washburn & Moen Ga. No.	Washburn & Moen Thickness	Sheet Copper in Ounces per Sq. Ft. Oz.	Sheet Copper Thickness	Sheet Zinc Ga. No.	Sheet Zinc Thickness
1/2	7-0	.5	...	....	...	.....	7-0	.4900	..	.....	27	.5
15/32	6-0	.4688	...	....	4-0	.460	6-0	.4615	..	.....	..	....
7/16	5-0	.4375	4-0	.454	...	.....	5-0	.4305	..	.....	..	....
13/32	4-0	.4062	3-0	.425	3-0	.4096	4-0	.3938	..	.....	..	....
3/8	3-0	.375	2-0	.380	2-0	.3648	3-0	.3625	..	.....	26	.375
11/32	2-0	.3438	0	.340	...	.....	2-0	.3310	..	.....	..	....
5/16	0	.3125	1	.300	0	.3249	0	.3065	..	.....	..	....
9/32	1	.2813	2	.284	1	.2893	1	.2830	.	.....	..	....
17/64	2	.2656	...	....	...	.....	2	.2625	..	.....	..	....
1/4	3	.25	3	.259	2	.2576	3	.2437	..	.....	25	.250
15/64	4	.2344	4	.238	3	.2294	...	.....	..	.....	..	....
7/32	5	.2188	5	.220	...	.....	4	.2253	..	.....	..	....
13/64	6	.2031	6	.203	4	.2043	5	.2070	..	.....	..	....
3/16	7	.1875	7	.180	5	.1918	6 7	.1920 .1770	..	.....	..	....
11/64	8	.1719	8	.165	...	.....	...	.....	..	.....	..	....
5/32	9	.1563	...	....	6	.1620	8	.1620	..	.....	..	....
9/64	10	.1406	9	.148	7	.1443	9 10	.1483 .1350	..	.....	..	....
1/8	11	.125	10	.134	8	.1285	11	.1205	96 83	.1296 .1183	24	.125
7/64	12	.1094	11 12	.120 .109	9 10	.1144 .1019	12	.1055	80	.1030	..	....
3/32	13	.0938	13	.095	11	.0907	13	.0915	72 64	.0972 .0864	23 22	.100 .090
5/64	14	.0781	14	.083	12	.0808	14	.0800	56	.0756	21	.080
9/128	15	.0703	15	.072	13	.0720	15	.0720	52	.0702	20	.070
1/16	16	.0625	16	.065	14	.0641	16	.0625	48	.0648	19	.060
9/160	17	.0563	17	.058	15	.0571	17	.0540	44 40	.0594 .0540	18	.055
1/20	18	.05	18	.049	16	.0508	18	.0475	36	.0486	17	.050
7/160	19	.0438	19	.042	17	.0453	19	.0410	32	.0432	16	.045
3/80	20	.0375	...	....	18	.0403	...	.....	23	.0378	15	.040
11/320	21	.0344	20	.035	19	.0359	20	.0348	26	.0351	14	.036
1/32	22	.0313	21	.032	20	.0320	21	.0318	24	.0324	13	.032
9/320	23	.0281	22	.028	21	.0285	22	.0286	20	.0270	12	.028
1/40	24	.025	23	.025	22	.0253	23	.0258	18	.0243	11	.024
7/320	25	.0219	24	.022	23 24	.0226 .0201	24 25	.0230 .0204	16	.0216	10	.020
3/160	26	.0188	25 26	.020 .018	...	.....	26	.0181	14	.0139	9	.018
11/640	27	.0172	26	.018	25	.0179	27	.0173	13	.0175	..	....
1/64	28	.0156	27	.016	26	.0159	28 29	.0162 .0150	12	.0162	8	.016
9/640	29	.0141	28	.014	27	.0142	30 31	.0140 .0132	10	.0135	7	.014
1/80	30	.0125	29 30	.013 .012	28	.0126	32	.0128	9	.0121	6	.012
7/640	31	.0109	...	....	29	.0113	33	.0118	8	.0108	5	.010
13/1280	32	.0102	31	.010	30	.0100	34	.0104	..	.....	..	....
3/320	33	.0094	32	.009	31	.0089	35	.0095	7	.0094	..	....
11/1280	34	.0086	...	....	...	.....	36 37	.0090 .0085	..	.....	..	....
5/640	35	.0078	33	.008	32	.0080	38	.0080	..	.0081	4	.008
9/1280	36	.0070	34	.007	33	.0071	...	.....	6	.....	..	....
17/2560	37	.0066	...	....	...	.....	...	.....	5	.0067	..	....
1/160	38	.0063	...	....	34	.0063	...	.....	..	.....	..	....
3/512	39	.0059	...	....	...	.....	...	.....	..	.....	3	.006
7/1280	40	.0055	...	....	35	.0056	...	.....	4	.0054	..	....

Weights and Measures

Troy Weight

24 grains = 1 pwt.
20 pwts. = 1 ounce.
12 ounces = 1 pound.
Used for weighing gold, silver and jewels.

Apothecaries' Weight

20 grains = 1 scruple.
3 scruples = 1 dram.
8 drams = 1 ounce.
12 ounces = 1 pound.

Avoirdupois Weight

27 11/32 grains = 1 dram.
16 drams = 1 ounce.
16 ounces = 1 pound.
25 pounds = 1 quarter.
4 quarters = 1 cwt.
2,000 lbs. = 1 short ton.
2,240 lbs. = 1 long ton.

Dry Measure

2 pints = 1 quart.
8 quarts = 1 peck.
4 pecks = 1 bushel.
36 bushels = 1 chaldron.

Liquid Measure

4 gills = 1 pint.
2 pints = 1 quart.
4 quarts = 1 gallon.
31½ gallons = 1 barrel.
2 barrels = 1 hogshead.

Time Measure

60 seconds = 1 minute.
60 minutes = 1 hour.
24 hours = 1 day.
7 days = 1 week.
28, 29, 30 or 31 days = 1 calender month (30 days = 1 month in computing interest).
365 days = 1 year.
366 days = 1 leap year.

Circular Measure

60 seconds = 1 minute.
60 minutes = 1 degree.
30 degrees = 1 sign.
90 degrees = 1 quadrant.
4 quadrants = 12 signs, or 360 degrees = 1 circle.

Long Measure

12 inches = 1 foot.
3 feet = 1 yard
5½ yards = 1 rod.
40 rods = 1 furlong.
8 furlongs = 1 stat. mile.
3 miles = 1 league.

Cloth Measure

2¼ inches = 1 nail.
4 nails = 1 quarter.
4 quarters = 1 yard.

Mariners' Measure

6 feet = 1 fathom.
120 fathoms = 1 cable length.
7½ cable lengths = 1 mile.
5,280 feet = 1 stat. mile.
6,085 feet = 1 nautical mile.

Miscellaneous

3 inches = 1 palm.
4 inches = 1 hand.
9 inches = 1 span.
18 inches = 1 cubit.
21.8 in. = 1 Bible cubit.
2½ ft. = 1 military step.

Square Measure

144 sq. in. = 1 sq. foot.
9 sq. ft. = 1 sq. yd.
30¼ sq. yds. = 1 sq. rod.
40 sq. rods = 1 rood.
4 roods = 1 acre.
640 acres = 1 sq. mile.

Surveyors' Measure

7.92 inches = 1 link.
25 links = 1 rod.
4 rods = 1 chain.
10 square chains or 160 square rods = 1 acre.
640 acres = 1 sq. mile.
36 square miles (6 miles square) = 1 township.

Cubic Measure

1,728 cu. in. = 1 cu. ft.
27 cu. ft. = 1 cu. yd.
128 cu. ft. = 1 cord (wood)
40 cu. ft. = 1 ton (ship'g)
2,150.42 cu. inches = 1 standard bushel.
268.8 cubic inches = 1 standard gallon.
1 cubic ft. = about ⅕ of a bushel.

Metric Equivalents

Linear Measure

1 centimeter = 0.3937 in.
1 decimeter = 3.937 in. = .0328 feet
1 meter = 39.37 in. = 1.0936 yards
1 dekam'r = 1.9884 rods.
1 kilom'r = 0.62137 mile.
1 in. = 2.54 centimeters.
1 ft. = 3.048 decimeters.
1 yard = 0.9144 meter.
1 rod = 0.5029 dekam'r.
1 mile = 1.6093 kilom'rs.

Square Measure

1 sq. centim't'r = 0.1550 sq. in.
1 sq. decimeter = 0.1076 sq. ft.
1 sq. meter = 1.196 sq. yd.
1 arc. = 3.954 sq. rd.
1 hektar = 2.47 acres.
1 sq. kilometer = 0.386 sq. m.
1 sq. in. = 6.452 square centimeters.
1 sq. ft. = 9.2903 square decimeters.
1 sq. yd. = 0.8361 sq. m.
1 sq. rd. = 0.2529 arc.
1 acre = 0.4047 hektar.
1 sq. m. = 2.59 sq. kilometers.

Measure of Volume

1 cu. centimeter = 0.061 cu. in.
1 cu. decimeter = 0.0353 cu. ft.
1 cu. mr. = 1.308 cu. yd.
1 stere = 0.2759 cd.
1 liter = 0.908 qt. dry; 1.0567 qt. liq.
1 dekaliter = 2.6417 gal.
1 hektoliter = 2.8375 bu.
1 cu. in. = 16.39 cubic centimeters.
1 cu. ft. = 28.317 cubic decimeters.
1 cu. yd. = 0.7646 cu. meter.
1 cord = 3.624 steres.
1 qt. dry = 1.101 liters.
1 qt. liq. = 0.9463 liter.
1 gal. = 0.3785 dekaliter.
1 pk. = 0.881 dekaliter.
1 bu. = 0.3524 hektoliter.

Weights

1 gram. = 0.0527 oz.
1 kilogram = 2.2046 lb.
1 metric ton = 1.1023 English ton.
1 oz. = 28.85 grams.
1 lb. = 0.4536 kilogram.
1 English ton = 0.9072 metric ton.

Approximate Metric Equivalents

1 decimeter = 4 in.
1 meter = 1.1 yards.
1 kilometer = ⅝ mile.
1 hektar = 2½ acres.
1 stere or cu. meter = ¼ of a cord
1 liter = 1.06 qt. liq.; 0.9 qt. dry.
1 hektoliter = 2⅝ bushel.
1 kilogram = 2 ⅛ lb.
1 metric ton = 2,200 lb.